



**COUNTY OF HENRICO
DEPARTMENT OF FINANCE
PURCHASING DIVISION
CONTRACT EXTRACT
NOTICE OF RENEWAL**

DATE:	March 15, 2024	Revised 4/3/24
CONTRACT COMMODITY/SERVICE: <i>(include contracting entity if cooperative)</i>	Athletic Field Maintenance & Repair Services	
CONTRACT NUMBER:	2261A	
COMMODITY CODE:	906.07	
CONTRACT PERIOD:	April 1, 2024 through March 31, 2025	
RENEWAL OPTIONS:	2 Additional One-Year Renewal Options through 2027	
USER DEPARTMENT:	Rec & Parks	
	Contact Name:	Jared Struck
	Phone Number:	804-501-4382 (Office); 804-201-3017 (Cell)
	Email Address:	Str099@henrico.us
HENRICO COOPERATIVE TERMS INCLUDED:	YES	
SUPPLIER:	Name:	Innovative Turf Applications and Consulting, Inc. (ITAC)
	Address:	3018 Black Friar Lane
	City, State:	Sandy Hook, VA 23153
	Contact Name:	Jason Melton
	Phone Number:	540-223-5696
	Email address:	Jason.melton@itacturf.com
ORACLE SUPPLIER NUMBER:	32324	
BUSINESS CATEGORY:	Women-Owned	
PAYMENT TERMS:	Net 45	
DELIVERY:	As needed and requested	
FOB:	County of Henrico	
BUYER:	Name:	Leisel O. Collins, CPPB, VCO, VCA
	Title:	Assistant Division Director
	Phone:	804-501-5687
	Email:	COL119@henrico.us

This contract is the result of a competitive solicitation issued by the Department of Finance, Purchasing Division. A requisition must be generated for all purchases made against this contract and the requisition must reference the contract number.



COMMONWEALTH OF VIRGINIA
County of Henrico

**Non-Professional Services Contract
Contract No. 2261A**

This Non-Professional Services Contract (this "Contract") entered into this 1 day of March 2022, by Innovative Turf Applications and Consulting, Inc. (the "Contractor") and the County of Henrico, Virginia (the "County").

WHEREAS the County has awarded the Contractor this Contract pursuant to Request for Proposals No. 21-2261-12KMW (the "Request for Proposals"), for Athletic Field Maintenance and Repair Services.

WITNESSETH that the Contractor and the County, in consideration of the mutual covenants, promises and agreements herein contained, agree as follows:

SCOPE OF CONTRACT: The Contractor shall provide the services to the County as set forth in the Contract Documents.

COMPENSATION: The compensation the County will pay to the Contractor under this Contract shall be in accordance with Exhibit A.

CONTRACT TERM: The Contract term shall be for a period of one year beginning April 1, 2022 and ending March 31, 2023. The County may renew the Contract for up to four one-year terms giving 30 days' written notice before the end of the term unless Contractor has given the County written notice that it does not wish to renew at least 90 days before the end of the term.

CONTRACT DOCUMENTS: This Contract hereby incorporates by reference the documents listed below (the "Contract Documents") which shall control in the following descending order:

1. This Non-Professional Services Contract between the County and Contractor.
2. The General Contract Terms and Conditions included in the Request for Proposals;
3. Contractor's Best and Final Offer dated February 13, 2022 (Exhibit A);
4. Contractor's Original Proposal dated January 5, 2022 (Exhibit B); and
5. The Scope of Services included in the Request for Proposals.

IN WITNESS WHEREOF, the parties have caused this Contract to be duly executed intending to be bound hereby.

Innovative Turf Applications and Consulting, Inc.
3018 Black Friar Lane
Sandy Hook, VA 23153

Signature

Rodney Hopkins owner
Printed Name and Title

Date

3/1/2022

County of Henrico, Virginia
P.O. Box 90775
Henrico, VA 23273-0775

Signature

Oscar Kwitt
Purchasing Director

Date

3/4/22

APPROVED AS TO FORM

Nyssa Brown 3/2/22
ASSISTANT COUNTY ATTORNEY

EXHIBIT A

Offeror shall provide unit pricing that includes labor, equipment, material and supervision.

Renovation

Service	Description/Notes	Price per Unit	Unit of Measure
10" Pitcher's Mound Construction	Complete with Premium Clay Bricks, Height set by Laser (Rubber Included)	\$4,200	Price / Mound
10" Pitcher's Mound Construction	Complete with Premium Bagged Clay, Height set by Laser (Rubber Included)	\$3,700	Price / Mound
6" Pitcher's Mound Construction	Complete with Premium Clay Bricks, Height set by Laser (Rubber Included)	\$3,400	Price / Mound
6" Pitcher's Mound Construction	Complete with Premium Bagged Clay, Height set by Laser (Rubber Included)	\$3,100	Price / Mound
Home Plate Area Construction	Complete with Premium Clay Bricks (Plate Included)	\$3,000	Price / Homeplate Area
Home Plate Area Construction	Complete with Premium Bagged Clay (Plate Included)	\$2,500	Price / Homeplate Area
Home Plate Installation	Remove and Install new Home Plate (Plate Included)	\$700	Price each
Pitching Rubber Installation	Remove and Install new Pitching Rubber (Rubber Included)	\$600	Price each
Base Plug Layout and Installation	Layout and Installation of base anchor plugs - Field size specific (base anchors included and set in concrete)	\$700	Price / Infield
Foul Pole Installation	Installation of County Provided Foul Poles	\$2,600	Price / Pair
Infield Lip Removal	Removal with Sod Cutter	\$300	Price / 1,000 sqft
Infield Lip Removal	Removal with Turf Renovator	\$150	Price / 1,000 sqft
Laser Guided Grading	Field Renovation	\$118	Price / 1,000 sqft
Laser Guided Grading	Baseball Infield without Baselines	\$3,700	Price / Infield
Laser Guided Grading	Baseball Infield with Baselines	\$3,900	Price / Infield
Laser Guided Grading	Softball Infield	\$4,000	Price / Infield
Machine Rate	Dozer with Operator	\$165	Price / Hr
Machine Rate	Dozer with Operator & Laser	\$195	Price / Hr
Machine Rate	Mini-Excavator with Operator	\$165	Price / Hr
Machine Rate	Tractor & Non-Powered Implement	\$150	Price / Hr
Machine Rate	Tractor with PTO driven Implement	\$175	Price / Hr
Machine Rate	Skid Steer with Operator	\$160	Price / Hr
On-Site Spoil/Debris/Material Hauling	Removal of Spoils/Debris/Material from field to specific area	\$12	Price / Cubic Yard
Reverse Tine Tilling	Blecavator or approved equivalent	\$81	Price / 1,000 sqft
Power Rake	Finish Power Raking	\$60	Price / 1,000 sqft
Safety Fence Installation	Orange Safety Fence with T-Posts	\$4.75	Price / Linear Foot
Silt Fence Installation	Installation and removal of silt fence after job completion	\$5.75	Price / Linear Foot
Straw Blowing	1 bale of straw per 1,000 sqft	\$35.00	Price / 1,000 sqft
Trenching	6" wide x 24" deep trench and backfill	\$8.75	Price / Linear Foot
Hydroseed		\$3,250	Price / Acre
Scoreboard Installation	Scoreboard & Electric not Included (Standard 2 Pole Scoreboard)	\$4,500	Price each

Sod/Sprigging

Service	Description/Notes	Price per Unit	Unit of Measure
Sod Installation - Bermudagrass	Big Roll or Pallet of Bermudagrass sod installation over 1,000 sqft - plastic netting removed	0.59	Price / sqft
Sod Repair < 2,000 sqft	Soil prep included - cut out, level area, install new	\$2.00	Price / sqft
Sod Repair 2,001-5,000 sqft	Soil prep included - cut out, level area, install new	\$1.75	Price / sqft
Sod Repair 5,001-10,000 sqft	Soil prep included - cut out, level area, install new	\$1.40	Price / sqft
Sod Repair 10,001-30,000 sqft	Soil prep included - cut out, level area, install new	\$1.25	Price / sqft
Sod Repair over 30,001 sqft	Soil prep included - cut out, level area, install new	\$1.10	Price / sqft
Sod Stripping	Remove & Grade area to be sodded with small walk-behind sod cutter	\$165	Price / 1,000 sqft
Sod Stripping	Remove & Grade area to be sodded with large 3-point hitch sod cutter	\$110	Price / 1,000 sqft
Sod Stripping	Remove & Plane area to be sodded with Koro Top Maker (or approved equal)	\$138	Price / 1,000 sqft
Sprig Bermudagrass	Big roll sod to sprig - 800 bushels per acre - plastic netting removed from big rolls	\$90	Price / 1,000 sqft
Sprig Fraze Mow Spoils	Loose sprig w/ manure-style spreader	\$80	Price / 1,000 sqft
Sprig Crimping	Extra crimping of Bermudagrass after sprig install	\$15	Price / 1,000 sqft
Grow-In	60 day Grow-In of Bermudagrass field to include weed control, fertility, and mowing	\$100	Price / 1,000 sqft

Irrigation

Service	Description/Notes	Price per Unit	Unit of Measure
Irrigation Install	1" MPT x MPT Standard 12" Swing Joint	\$145	Price each
Irrigation Install	1" PVC Lateral Line	\$2.20	Price / Linear Foot
Irrigation Install	1" Control Valve	\$315	Price each
Irrigation Install	1.5" PVC Main/Lateral Line	\$4.40	Price / Linear Foot
Irrigation Install	1.5" Control Valve	\$380	Price each
Irrigation Install	1.5" Flow Meter	\$895	Price each
Irrigation Install	1.5" Backflow Preventer with 3-ft x 5-ft Concrete Pad	\$1,845	Price each
Irrigation Install	2" PVC Main/Lateral Line	\$8.80	Price / Linear Foot
Irrigation Install	2" Backflow Preventer with 3-ft x 5-ft Concrete Pad	\$2,320	Price each
Irrigation Install	2" Control Valve	\$470	Price each
Irrigation Install	2" Flow Meter	\$525	Price each
Irrigation Install	3" PVC Main/Lateral Line	\$13	Price / Linear Foot
Irrigation Install	3" Flow Meter	\$1,155	Price each
Irrigation Install	3" Backflow Preventer with 4-ft x 6-ft Concrete Pad	\$4,350	Price each
Irrigation Install	Control Valve Wiring	\$1.40	Price / Linear Foot
Irrigation Install	Controller with internet communication & flow meter	\$8,250	Price each
Irrigation Install	Standard Controller without internet communication	\$2,320	Price each
Irrigation Install	Controller Pedestal	\$645	Price each
Irrigation Install	Commercial Turf Rotor Head with Swing Joint	\$495	Price each
Irrigation Install	Quick Coupler Valve on Threaded Swing Joint with molded lugs for Rebar supports	\$310	Price each
Irrigation Install	Booster Pump Installation including WaterBox Model B pumping system	\$13,475	Price each
Irrigation Install	Pump enclosure without heat	\$1,650	Price each
Irrigation Install	10" Round Valve Box - Black/Green Lid	\$110	Price each
Irrigation Install	2' x 3' Valve Box - Black/Green Lid	\$625	Price each
	Pipe fittings - all slip fittings need purple primer and PVC cement. All threaded connects need Teflon tape		

Maintenance

Service	Description/Notes	Price per Unit	Unit of Measure
Baseball Infield Grooming	Finish Drag of Infield Skinned Area using appropriate infield grooming machine	\$150	Price / Infield
Softball Infield Grooming	Finish Drag of Infield Skinned Area using appropriate infield grooming machine	\$150	Price / Infield
Core Processing	Pulverizing cores with machine that grinds plugs and returns to surface	\$17	Price / 1,000 sqft
Core Processing	Dragging cores with Drag Mat to pulverize	\$10	Price / 1,000 sqft
Debris Sweeping	Vacuuming debris from athletic field surface	\$20	Price / 1,000 sqft
Edging	Edging infield arcs and baselines	\$800	Price / Infield
Line Trimming	Weed eating	\$62	Price / Hr
Fertilization	Applying granular fertilizer with broadcast spreader	\$3.75 plus materials	Price / 1,000 sqft + materials
Fertilization	Applying liquid fertilizer with boom sprayer	\$4.00 plus materials	Price / 1,000 sqft + materials
Lime application	Broadcast spreading of bulk lime	\$5.00 plus materials	Price / 1,000 sqft + materials
Spraying	Spraying Turf Chemicals	\$4.00 plus materials	Price / 1,000 sqft + materials
Field Layout	Layout for Line Painting	\$175	Price / Hr
Field Line Painting	1:1 dilution of paint - 4" wide line	\$175	Price / 5 gallon paint bucket
Field Painting (Color Enhancement)	Paint Entire Field 1 color - Green	\$65	Price / 1,000 sqft
Logo Painting - Multiple Colors	Template supplied by County	\$200	Price / 5 gallon paint bucket
Logo Painting - Single Color	Template supplied by County	\$155	Price / 5 gallon paint bucket
Field Rolling	with Tow behind roller	\$8.50	Price / 1,000 sqft
Field Rolling	with 1 Ton Double Drum Vibratory Roller	\$16	Price / 1,000 sqft
Field Rolling	with 6 Ton Vibratory Roller	\$18	Price / 1,000 sqft
Fraze Mowing	1/2" depth with Field TopMaker with Universe Rotor (or approved equal)	\$92	Price / 1,000 sqft
Hollow Core Deep Tine Aeration	1-3/8" Tine x 12" max. Depth, 6" x 6" hole spacing	\$24	Price / 1,000 sqft
Hollow Core Shallow Tine Aeration	3/4" Tine x 5" max. Depth, 2.5" x 2.5" hole spacing	\$12	Price / 1,000 sqft
Solid Deep Tine Aeration	3/4" tine x 12" max. Depth - 6" x 6" spacing	\$17.50	Price / 1,000 sqft
Solid Shallow Tine Aeration	3/4" Tine x 5" max. Depth, 2.5" x 2.5" hole spacing	\$10	Price / 1,000 sqft
Linear Decompaction	iMants Shockwave 220 (or approved equal)	\$17.50	Price / 1,000 sqft
Recycle Topdressing	iMants Recycling Dresser (or approved equal)	\$30	Price / 1,000 sqft
Verti-Cutting		\$29	Price / 1,000 sqft

Reel Mowing	3/4" height of cut	\$1.75	Price / 1,000 sqft
Rotary Mowing	Wide area rotary mowing - no less than 1-1/2" height of cut	\$1.75	Price / 1,000 sqft
Seeding	Broadcast spreading - seed variety chosen by County	\$4.00 plus materials	Price / 1,000 sqft + materials
Seeding	Slit seed/drill application - seed variety chosen by County	\$16 plus materials	Price / 1,000 sqft + materials
Topdressing Luck Stone 80/20 Sand-Compost Mix	Topdressing to including material	\$93	Price / Ton
Topdressing Luck Stone Bio-Filter Mix	Topdressing to including material	\$110	Price / Ton
Topdressing Luck Stone Choice Infield Mix	Topdressing to including material	\$104	Price / Ton
Topdressing McGill SportsTurf Compost	Topdressing to including material	\$58	Price / cubic yard
Topdress McGill SoilBuilder Compost	Topdressing to including material	\$53	Price / cubic yard
Topdressing Infield Conditioner	Topdressing Turface SlideMaster at 750 lbs per 1000 sqft	\$40 plus material supplied by county	Price / 1,000 sqft + materials
Topdressing Luck Stone Premium Infield Mix	Topdressing to including material	\$131	Price / Ton
Topdressing Luck Stone Sand	Topdressing to including material	\$88.00	Prine / Ton
Topdressing Luck Stone Premium Top Soil	Topdressing to including material	\$75	Price / Ton
Topdressing Luck Stone Charcoal Warning Track Material	Topdressing to including material	\$121	Price / Ton

Drainage

Service	Description/Notes	Price per Unit	Unit of Measure
Catch Basin Installation	12" Square grate	\$200	Price each
Flat Panel Drainage	1" X 12" Panels	\$6.50	Price / Linear Foot
French Drain	4" HDPE pipe with gravel - performed with laser guided equipment	\$16.50	Price / Linear Foot
French Drain	6" HDPE pipe with gravel - performed with laser guided equipment	\$24.50	Price / Linear Foot
French Drain	10" HDPE pipe with gravel - performed with laser guided equipment	\$26.50	Price / Linear Foot
French Drain	12" HDPE pipe with gravel - performed with laser guided equipment	\$32.50	Price / Linear Foot
Pipe Fittings	HDPE pipe fittings	\$85	Price each
Sand Channel Drainage with pipe	4" channel on 8' centers with 50mm pipe, gravel then sand backfill, @ 14" max. depth	\$0.98	Price / sqft
Sand Channel Drainage without pipe	2" channel on 3" centers with 10" max. depth	\$0.85	Price / sqft
Sand Injection/Sand Slit Drainage	1/2" slit on 10" centers with 6" depth	\$0.48	Price / sqft

Artificial Turf

Service	Description/Notes	Price per Unit	Unit of Measure
Artificial Turf Grooming	Drag Brushing to erect existing fibers on routine maintenance	\$13.00	Price / 1,000 sqft
Artificial Turf Reconditioning	Redexim Verti-top 1500 (or approved equal)	\$27	Price / 1,000 sqft
Artificial Turf Snow Removal	Removal with plow equipped with special cutting edge to ensure no damage to turf	\$38	Price / 1,000 sqft
Topdressing Corkonut Infill	Topdressing to including material - applied with Campey Speedresser (or approved equivalent)	0.34/pound plus material supplied by county	Price / 1,000 sqft + Materials
Topdressing Crumb Rubber	Topdressing to include material - applied with Campey Speedresser (or approved equivalent)	0.25/pound plus material supplied by county	Price / 1,000 sqft + Materials

Miscellaneous

Service	Description/Notes	Price per Unit	Unit of Measure
Auger/Hole Drilling	Up to 2' diameter	\$225	Price / hole
Disassembled Bedknife Gridding		\$19.50	Price / bedknife
Disassembled Greensmower Reel Grind		\$92	Price / reel
Disassembled Fairway Reel Grind		\$110.50	Price / reel
Full Service Fairway Reel Grind		\$150	Price / reel
Full Service Greensmower Reel Grind		\$125	Price / reel
Full Service Walk Greensmower Reel Grind		\$125	Price / reel
Engineering	Project Manager	\$220	Price / Hr
Engineering	Designer	\$150	Price / Hr
Engineering	Principal	\$360	Price / Hr
Engineering	Survey Technician	\$145	Price / Hr



Proposal Response for Henrico County RFP
21-2261-12KMW
Athletic Field Maintenance and Repair Services

Submitted by:
Innovative Turf Applications and Consulting, Inc. (ITAC)
VA SCC: 06709323

The sections and attachments of this document are in response to the requirements listed in Henrico County RFP 16-1280-10CS for Athletic Field Maintenance and Repair Services. This response is respectfully submitted for consideration by Innovative Turf Application Consulting, Inc. (ITAC), a Louisa, Virginia based athletic turf management, maintenance and construction firm.

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January 5, 2022

Oscar Knott, Purchasing Director
Henrico County Department of Finance, Purchasing Division
8600 Staples Mill Road
Henrico, Virginia 23228

Mr Knott,

When Innovative Turf Applications and Consulting, Inc. (ITAC) opened its doors for business nearly 19 years ago, we did so with the goal of providing a laser-focus on the unique construction and maintenance needs of athletic fields. As a result, we proudly have maintained a client list representing the finest natural and artificial athletic fields in the commonwealth of Virginia.

From practice to division-leading competition fields, all of ITAC's resources, staff, and equipment are devoted to providing the best surface for all field-based athletics. With an intimate familiarity with the Henrico Division of Recreation and Parks' needs, myself and the ITAC team are best prepared to meet the demands of maintaining Henrico's excellent inventory of athletic fields.

Our goal is to ensure that the Division can meet the needs and demand for athletic fields created by the rapid rise in sports tourism. By ensuring that all fields in Henrico inventory are at their absolute best, athletes and spectators will be impressed on gameday and excited to return in the future.

We pride ourselves on becoming a seamless part of each client's team and learning the specific needs of each field as if they were our own. With expertise in cutting edge and emerging techniques, each member of the ITAC team serves as a source of expertise to the future success of every project.

Finally, if you have any questions about our company or any part of our response to this RFP, you can always contact me directly at 804-564-5080.

Respectfully,

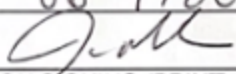
Rodney Hopkins
Owner, ITAC

**ATTACHMENT A
PROPOSAL SIGNATURE SHEET**

My signature certifies that the proposal as submitted complies with all requirements specified in this Request for Proposal ("RFP") No. 21- 2261-12KMW- Athletic Field Maintenance & Repair Services.

My signature also certifies that by submitting a proposal in response to this RFP, the Offeror represents that in the preparation and submission of this proposal, the Offeror did not, either directly or indirectly, enter into any combination or arrangement with any person or business entity, or enter into any agreement, participate in any collusion, or otherwise take any action in the restraining of free, competitive bidding in violation of the Sherman Act (15 U.S.C. Section 1) or Sections 59.1-9.1 through 59.1-9.17 or Sections 59.1-68.6 through 59.1-68.8 of the Code of Virginia.

I hereby certify that I am authorized to sign as a legal representative for the business entity submitting this proposal.

LEGAL NAME OF OFFEROR (DO NOT USE TRADE NAME):
INNOVATIVE TURF APPLICATIONS AND CONSULTING, INC.
ADDRESS:
3018 Black Friar Lane
Sandy Hook, VA 23153
FEDERAL ID NO:
06-1780289
SIGNATURE:

NAME OF PERSON SIGNING (PRINT):
JASON MELTON
TITLE:
General Manager
TELEPHONE:
540-223-5696
FAX:
804-556-0014
EMAIL ADDRESS:
JASON.MELTON@itncturf.com
DATE:
1/5/22

ATTACHMENT B BUSINESS CATEGORY CLASSIFICATION FORM

Company Legal Name: INNOVATIVE TURF Applications and Consulting, INC.

This form completed by: Signature: [Signature] Title: General Manager

Date: 1/5/22

PLEASE SPECIFY YOUR **BUSINESS CATEGORY** BY CHECKING THE APPROPRIATE BOX(ES) BELOW.

(Check all that apply.)

- SMALL BUSINESS
- WOMEN-OWNED BUSINESS
- MINORITY-OWNED BUSINESS
- SERVICE-DISABLED VETERAN
- EMPLOYMENT SERVICES ORGANIZATION
- NON-SWaM (Not Small, Women-owned or Minority-owned)

SUPPLIER REGISTRATION – The County of Henrico encourages all suppliers interested in doing business with the County to register with eVA, the Commonwealth of Virginia’s electronic procurement portal, <http://eva.virginia.gov>.

eVA Registered? Yes No

If certified by the Virginia Minority Business Enterprises (DMBE), provide DMBE certification number and expiration date.

677172 NUMBER 7/24/23 DATE

DEFINITIONS

For the purpose of determining the appropriate business category, the following definitions apply:

"Small business" means a business, independently owned and controlled by one or more individuals who are U.S. citizens or legal resident aliens, and together with affiliates, has 250 or fewer employees, or annual gross receipts of \$10 million or less averaged over the previous three years. One or more of the individual owners shall control both the management and daily business operations of the small business.

"Women-owned business" means a business that is at least 51 percent owned by one or more women who are U.S. citizens or legal resident aliens, or in the case of a corporation, partnership, or limited liability company or other entity, at least 51 percent of the equity ownership interest is owned by one or more women who are U.S. citizens or legal resident aliens, and both the management and daily business operations are controlled by one or more women.

"Minority-owned business" means a business that is at least 51 percent owned by one or more minority individuals who are U.S. citizens or legal resident aliens, or in the case of a corporation, partnership, or limited liability company or other entity, at least 51 percent of the equity ownership interest in the corporation, partnership, or limited liability company or other entity is owned by one or more minority individuals who are U.S. citizens or legal resident aliens, and both the management and daily business operations are controlled by one or more minority individuals.

"Minority individual" means an individual who is a citizen of the United States or a legal resident alien and who satisfies one or more of the following definitions:

1. "African American" means a person having origins in any of the original peoples of Africa and who is regarded as such by the community of which this person claims to be a part.

2. "Asian American" means a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands, including but not limited to Japan, China, Vietnam, Samoa, Laos, Cambodia, Taiwan, Northern Mariana Islands, the Philippines, a U.S. territory of the Pacific, India, Pakistan, Bangladesh, or Sri Lanka and who is regarded as such by the community of which this person claims to be a part.

3. "Hispanic American" means a person having origins in any of the Spanish-speaking peoples of Mexico, South or Central America, or the Caribbean Islands or other Spanish or Portuguese cultures and who is regarded as such by the community of which this person claims to be a part.

4. "Native American" means a person having origins in any of the original peoples of North America and who is regarded as such by the community of which this person claims to be a part or who is recognized by a tribal organization.

"Service disabled veteran business" means a business that is at least 51 percent owned by one or more service disabled veterans or, in the case of a corporation, partnership, or limited liability company or other entity, at least 51 percent of the equity ownership interest in the corporation, partnership, or limited liability company or other entity is owned by one or more individuals who are service disabled veterans and both the management and daily business operations are controlled by one or more individuals who are service disabled veterans.

"Service disabled veteran" means a veteran who (i) served on active duty in the United States military ground, naval, or air service, (ii) was discharged or released under conditions other than dishonorable, and (iii) has a service-connected disability rating fixed by the United States Department of Veterans Affairs.

"Employment services organization" means an organization that provides community-based employment services to individuals with disabilities that is an approved Commission on Accreditation of Rehabilitation Facilities (CARF) accredited vendor of the Department of Aging and Rehabilitative Services.

ATTACHMENT C
Virginia State Corporation Commission (SCC)
Registration Information

The Offeror:

is a corporation or other business entity with the following SCC identification number:

06709323 -OR-

is not a corporation, limited liability company, limited partnership, registered limited liability partnership, or business trust -OR-

is an out-of-state business entity that does not regularly and continuously maintain as part of its ordinary and customary business any employees, agents, offices, facilities, or inventories in Virginia (not counting any employees or agents in Virginia who merely solicit orders that require acceptance outside Virginia before they become contracts, and not counting any incidental presence of the Bidder in Virginia that is needed in order to assemble, maintain, and repair goods in accordance with the contracts by which such goods were sold and shipped into Virginia from Bidder's out-of-state location) -OR-

is an out-of-state business entity that is including with this bid/proposal an opinion of legal counsel which accurately and completely discloses the undersigned Bidder's current contracts with Virginia and describes why those contracts do not constitute the transaction of business in Virginia within the meaning of §13.1-757 or other similar provisions in Titles 13.1 or 50 of the Code of Virginia.

Please check the following box if you have not checked any of the foregoing options but currently have pending before the SCC an application for authority to transact business in the Commonwealth of Virginia and wish to be considered for a waiver to allow you to submit the SCC identification number after the due date for bids:

ATTACHMENT D

PROPRIETARY/CONFIDENTIAL INFORMATION IDENTIFICATION

NAME OF FIRM/OFFEROR: ITAC

Trade secrets or proprietary information submitted by an Offeror shall not be subject to public disclosure under the Virginia Freedom of Information Act; however, the Offeror must invoke the protections of Va. Code § 2.2-4342.F in writing, either before or at the time the data or other material is submitted. The written notice must specifically identify the data or materials to be protected including the section of the proposal in which it is contained and the page numbers, and state the reasons why protection is necessary. The proprietary or trade secret material submitted must be identified by some distinct method such as highlighting or underlining and must indicate only the specific words, figures, or paragraphs that constitute trade secret or proprietary information. In addition, a summary of proprietary information submitted shall be submitted on this form. The classification of an entire proposal document, line item prices, and/or total proposal prices as proprietary or trade secrets is not acceptable. If, after being given reasonable time, the Offeror refuses to withdraw such a classification designation, the proposal will be rejected.

SECTION/TITLE	PAGE NUMBER(S)	REASON(S) FOR WITHHOLDING FROM DISCLOSURE
Financial Statements and Firm Experience	27-28	These pages contain financial statements for ITAC.
Table of Contents	2	Table of contents entry for financial statements. We only need the one line titled "Financial Statements and Firm Experience" redacted.

**ATTACHMENT F
DIRECT CONTACT WITH STUDENTS**

Name of Bidder: Innovative Turf Applications and Consulting, INC.

Pursuant to Va. Code § 22.1-296.1, as a condition of awarding a contract for the provision of services that require the contractor or employees of the contractor to have direct contact with students on school property during regular school hours or during school-sponsored activities, the contractor shall provide certification of whether any individual who will provide such services has been convicted of any violent felony set forth in the definition of barrier crime in subsection A of Va. Code § 19.2-392.02; any offense involving the sexual molestation, physical or sexual abuse, or rape of a child; or any crime of moral turpitude.

Any individual making a materially false statement regarding any such offense is guilty of a Class 1 misdemeanor and, upon conviction, the fact of such conviction is grounds for the revocation of the contract to provide such services and, when relevant, the revocation of any license required to provide such services.

As part of this submission, I certify the following:

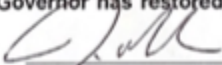
- None of the individuals who will be providing services that require direct contact with students on school property during regular school hours or during school-sponsored activities have been convicted of a violent felony set forth in the definition of "barrier crime" in Va. Code § 19.2-392.02(A); an offense involving the sexual molestation, physical or sexual abuse, or rape of a child;

And (select one of the following)

- None of the individuals who will be providing services that require direct contact with students on school property during regular school hours or during school-sponsored activities have been convicted of any felony or any crime of moral turpitude.

or

- One or more individuals who will be providing services that require direct contact with students on school property during regular school hours or during school-sponsored activities has been convicted of a felony or crime of moral turpitude that is not set forth in the definition of "barrier crime" in Va. Code § 19.2-392.02(A) and does not involve the sexual molestation, physical or sexual abuse, or rape of a child. (In the case of a felony conviction meeting these criteria, the contractor must submit evidence that the Governor has restored the individual's civil rights.)



Signature of Authorized Representative
JASON MELTON

Printed Name of Authorized Representative

*Printed Name of Vendor
(if different than Representative)*

Executive Summary

Scope of Services

Pricing

This document and its attachments constitute a fixed price, indefinite quantity proposal for services relating to maintenance and/or repair of athletic fields on an as-needed basis for the Division of Recreation and Parks. Price quotations for additional services not identified on page 33-37 (completed Attachment H) may be requested at any time by emailing or calling Rodney Hopkins, Owner of ITAC.

Ordering and Billing

Following notification by the Division of Recreation and Parks, ITAC will visit the site and collaborate with appropriate Division personnel on the scope of services required. Within seven days of the finalization of the scope of services, ITAC will provide a cost proposal using the current list of fixed price services (page 33-37, Attachment H).

Final pricing, schedule, and other terms will be finalized with Division personnel as required. Once a final cost proposal has been accepted, work will begin under the authorization of a Division purchase order.

The ITAC team acknowledges that in select emergency situations, a modified purchase process may be required. In select emergency cases, as defined by authorized Division personnel, ITAC will work to accommodate alternate purchase processes.

Invoices for payment will be sent to the attention of Mr. Steve Ruckman, Park Services Division Supervisor – Turf/Grounds, at the address specified in the RFP.

Personnel and Equipment

ITAC employs a full staff of turf experts who spend 100% of their time constructing, maintaining and repairing athletic fields. Each ITAC team member holds a degree or certificate in a turf-related field and maintains their knowledge through continuing education and attendance at leading industry conferences.

All ITAC staff maintain knowledge of current best practices in athletic field maintenance and repair and carry licenses for applicable procedures and equipment operation as required. Individual license for key personnel are identified in the attached resumes.

ITAC teams operate with supervisors who are properly equipped to communicate job needs to all personnel. All ITAC staff also are all fully capable of communicating with clients and answering detailed, technical questions. At ITAC there is a strong belief in ensuring that every person at every level of a project are fully qualified to do the work.

With respect to the Division of Recreation and Parks' requested equipment list, ITAC is proud to own and operate all of the required commercial equipment listed in Appendix J (page 47-52 of this response). In addition, ITAC employs a full-time maintenance staff to ensure that all equipment stays in top working condition, as well as ensuring a built-in capability for rapid repairs and regular maintenance. Additionally, all equipment that the Division has identified within the RFP is already owned by ITAC and ITAC staff are fully proficient in the operation of all identified equipment.

Even though ITAC is classified as a small woman-owned business, ITAC employs a full team capable of performing multiple simultaneous work orders. Additionally, staff are trained to ensure that there is no single point of failure in the performance of any work order.

ITAC maintains a high level of professional conduct that prevents accidents and other unintentional damage of the Division's fields and surrounding areas. In the event of an accident, ITAC understands its responsibility to repair any Division property damaged in the performance of a work order or other assignment. ITAC expects that vulnerable Division property (sprinkler heads, junction boxes, and remote control valve box covers, etc.) will be clearly marked prior to the beginning of any work order. Clear markings may include permanent signage or temporary indicators (flags, spray paint, etc.) placed adjacent to vulnerable resources.

Pricing indicated in ITAC's fixed price service list (page 33-37, Attachment H) extends to all work orders confirmed by the Division under the contract. This pricing is based on the expected performance of work during normal hours as outlined in the RFP (7:00am to 4:30pm at most sites). In the event of emergency work or work required for performance outside of normal hours, pricing will be agreed to in the cost proposal and accepted purchase order.

Following the completion of a work order, ITAC will notify Division staff responsible for inspecting the field. Following the inspection, ITAC staff will make personnel and equipment available to immediately address any discrepancies in performance required.

Offeror Qualifications

ITAC is one of a select few firms in the commonwealth of Virginia fully equipped to handle the requirements of this RFP. All labor, supervisors, materials and equipment are able to be provided by ITAC directly. Select materials are sourced from first-tier providers utilizing existing purchasing relationships. At the time of this response, no new or additional resources, equipment, suppliers (for materials), or staff are required for ITAC to fully support the needs of the Henrico Division of Recreation and Parks. ITAC is prepared to immediately begin performance under this contract, should it be awarded.

Assumptions

The fixed pricing provided includes the assumption that key materials (sod and top dressing, for example) maintain their current pricing and do not increase in cost more than 3% per year, in line with the allowable price increase under this contract. In the event that market conditions cause key material costs to ITAC to increase more than 3% in a given year, related pricing will need to be adjusted. Adjustment beyond the allowed 3% will NOT be required for any services provided entirely by ITAC, only those that require market-driven materials.

Exceptions

With the submission of this response, ITAC declares that it has no noted exceptions for any of the services requested and defined in the RFP or any of its attachments.

Company Profile

Innovative Turf Applications and Consulting (ITAC) was founded in 2003 by Rodney Hopkins after he observed that there were no firms in the commonwealth of Virginia specifically focused on the unique and demanding needs of athletic fields. With a staff of turf construction and maintenance experts, ITAC remains one of the only companies in Virginia that is 100% focused on the needs of today's natural and artificial athletic fields.

The ITAC team consists of 12 staff, all highly skilled and experienced in their areas of assignments. ITAC also hires seasonal workers and interns each year on an as-needed basis. For those select seasonal positions, ITAC maintains a list of qualified personnel to ensure that even season staff are of the highest possible education and certification for client work.

Full resumes for key ITAC staff are included as attachments to this response and include details on each person's education, certification, and recent training attended. ITAC's key staff include the company's founder and division supervisors. A brief summary of each key ITAC team member is below:

Page 12

- Rodney Hopkins, Owner: Rodney has more than 30 years of intimate experience with the unique needs of both indoor and outdoor athletic surfaces. In addition to his degree in landscape and turf management, Rodney participates in both regular annual training as well as specialized training when available. Notably, Rodney is one of only a handful of US-based turf experts trained at the imants facility in Holland.
- Jason Melton, General Manager: Jason has more than 19 years of experience dealing directly with the construction and maintenance needs of athletic fields.
- DP Seay, Superintendent of Construction Services: DP has more than 7 years of experience dealing directly with the construction and maintenance needs of athletic fields. Like all ITAC staff, DP participates in ongoing annual training in addition to his work with ITAC clients to ensure that he and his crews are always utilizing the latest construction techniques.
- Richard “Rick” Waters, Turf Equipment Technician: Rick manages maintenance for the full ITAC equipment inventory. With more than 40 years of maintenance experience and top certifications from Kohler, Toro, the Equipment and Engine Training Council, and the Outdoor Power Equipment and Engine Service Association, Rick ensure that all ITAC equipment is in top shape. With Rick overseeing maintenance and repairs, ITAC is able to limit equipment downtime.

Qualifications and Ability to Provide Services

ITAC is fully qualified and experienced in providing all services requested for all field types in all locations specified.

With relation to maintenance of Bermuda turf at VHSL competition level and above, ITAC considers the VHSL standard to be a minimum standard for all client fields. ITAC also counts fields like the award-winning Louisa County High School Football Field as clients and works with their full-time staff on the ongoing maintenance of the fields in support of year-long athletic programs.

ITAC also maintains ownership of specialized equipment for the installation of Bermuda grass sprigs and sod and have utilized that equipment for multiple clients, including both the Henrico Division of Recreation and Parks and the Hanover County Parks and Recreation department.

The ITAC team maintains specific training and education requirements on the best chemical application resources for both warm and cool season treatments. ITAC also maintains a certified nutrient management planner on staff to create approved treatment plans for fields.

ITAC staff execute all treatment plans in full compliance with national, state and local chemical laws and regulations including maintaining licenses as applicable. ITAC is able to provide chemical plans for each field, and has included that cost per plan in the full pricing list (page 33-37, Attachment H).

As also included in the completed Appendix J at the end of this proposal, ITAC owns, operates, and maintains all Bermuda turf equipment proposed for use with this contract. Bermuda turf equipment includes the full scope of construction equipment, installation equipment, and maintenance equipment defined in Appendix J.

Within ITAC's vast inventory of turf equipment, ITAC is also able to support artificial turf by providing rapid snow removal with five (5) total machines capable of simultaneous deployment. Additionally, ITAC owns and maintains artificial turf grooming equipment for essential maintenance on both indoor and outdoor artificial turf services. Full details on equipment can be found under the next section of this response, the statement of needs.

Statement of Needs

ITAC has included on the following pages details for each of the service categories to best demonstrate knowledge and experience in performing the requested services. For categories that are represented as multiple line items (for example, Solid Tine Aeration both at 6" and 4"), ITAC has included a general response for the category, along with a full accounting of equipment available for the performance of work. In addition to listing all of the requested equipment for each category, ITAC has also included the full list of equipment that are available for use.

Photos are included where appropriate with each description to highlight part of the process of a service.

Fraze Mowing

Equipment:

- Koro 2000 Field Topmaker w/ John Deere 6115M tractor
- Koro 1200 Field Topmaker w/ John Deere 4066R tractor
- Stec Dump trailer w/ John Deere 1070 tractor
- Dakota Dump trailer w/ Kubota L3410 tractor

Process:

Fraze Mowing is the removal of unwanted surface matter (spoils) from Bermuda grass playing fields. Spoils can be removed from the site or can be re-used for sprigging in select circumstances. ITAC's Owner, Rodney Hopkins, traveled to Holland in 2014 to learn this technique at the imants headquarters.

Selected Client:

ITAC performs Fraze Mowing for a number of clients, including the Steward School and the Little League World Series in Williamsport, Pennsylvania.



Sod Stripping

Equipment:

- Koro 2000 Field Topmaker w/ John Deere 6115M tractor
- Koro 1200 Field Topmaker w/ John Deere 4066R tractor
- Stec 710 Dump trailer w/ John Deere 1070 tractor
- Dakota 550 Dump trailer w/ Kubota L3410 tractor
- KWMI 3030 Big roll sod harvester/cutter

Process:

Field Stripping is a renovation technique used to remove existing turf from a field. Typically 1.5"-2" of existing turf is stripped and discarded from the field to prepare for tillage.

Selected Client:

Virginia Commonwealth University's Sportsbacker Stadium



Spoils/Debris Material Hauling

Equipment:

- Bobcat T870 tracked skid steer x2
- Bobcat A770 all wheel steer rubber tire skid steer
- Bobcat angle broom skid steer attachment
- Bobcat sweeper skid steer attachment

Process:

Following the removal of material from a field or project site, ITAC loads and hauls discarded material away for disposal. Discarded materials are recycled where possible.

Recycle Top Dressing

Equipment:

- Koro Recycle Dresser 1900
- Harper TV60 Turbo Vacuum/Sweeper
- Harper TV40 Turbo Vacuum/Sweeper
- Harley Rake 3 point hitch mounted

Process:

Recycle Dressing uses a slit cutting machine to pull existing sand material from the root zone to the surface. Resulting material can be then drug in as top dressing. This technique greatly reduces and in some case eliminates the need to ordering additional top dressing material.

Selected Clients:

Virginia Commonwealth University (VCU)
City of Richmond, VA
Christopher Newport University



Linear Decompaction

Equipment:

- Koro Shockwave 2.2 x2 w/ John Deere 5085M
- Koro Shockwave 2.1 w/ John Deere 4066R

Process:

This process is a proven European style of linear slicing aeration that shatters the profile but leaves the surface mostly undisturbed. There is little to no cleanup required and the field is immediately playable afterwards.

Selected Client:

King Family Vineyard



Blecavate (Reverse Tine Tilling)

Equipment:

- Stecavator SV250 8' reverse tine tiller
- Rotadairon RX250 9' reverse tine tiller
- Rotadairon RDH60 skid steer mounted reverse tine tiller
- Toro Dingo mounted soil cultivator

Process:

This process of reverse tine tilling incorporates compost to the top 8" of soil that adds nutrients to promote the growth of sprigs or sod. The process also results in a more absorbent soil that assists in water uptake. Reverse tine tilling is used as a preparation step during field renovation.

Selected Client:

Spotsylvania County Schools



Laser Guided Hydraulic Blading

Equipment:

- Bobcat skid steer mounted 8' laser grading blade
- Bobcat skid steer mounted 9' laser grading blade
- Bobcat skid steer mounted 7' laser grading box blade
- Level Best PL84D skid steer mounted 7' laser grading box blade
- Level Best Dingo mounted laser grading box blade

Process:

This process uses specialized laser equipment that is accurate to 1/10 of an inch. This process is used to correct field surface grade issues and create an even playing surface. Also promotes surface draining. The equipment above can also be used for Baseball infield grading.

Selected Client:

University of Virginia (UVA)



Solid Tine Aeration

Equipment:

- 1st Products AE60 aera-vator
- 1st Products AE60 agri-vator
- John Deere Aercore 2000
- Toro Procore 660 aerator
- Toro Procore 1298 aerator
- Toro SR75 HD Deep tine aerator x3

Process:

Simple and inexpensive aerification practice using solid tines to shatter the soil surface 3-6" in depth with minimal surface disruption.

Selected Client:

Riverbend Highschool



Reel and Rotary Mowing

Equipment:

- Reel Mowing:
 - Toro RM5510 5 reel mower x5
 - Toro RM5500 D 5 reel mower x4
 - Toro RM3100 D 3 reel mower x2
 - Toro RM6500 D reel mower
 - Toro GM1000 walk behind reel mower
- Reel Maintenance:
 - Foley 633 ACCU-Pro reel grinder
 - Foley 650 ACCU-Master reel grinder
 - Foley 670 ACCU-Master bedknife grinder
- Rotary Mowing:
 - Toro GM4500 D 5 deck 9' rotary mower x2
 - Toro GM4700 D 7 deck 12.5' rotary mower
 - Toro GM455 D deck 10.5' rotary mower x2
 - Toro GM3500 D 3 deck 6' rotary sidewinder mower
- Zero Turn Rotary Mowing:
 - Toro GM7210 72" zero turn mower
 - Toro Titan Z 48" zero turn mower

Process:

Type of mowing an equipment used varies by client preference and field type. ITAC also is capable of providing customs show striping patterns. Additionally, ITAC's Toro Equipment is maintained by a Toro certified mechanic on staff. Blades are sharpened using latest manufacturer techniques and all service is performed in-house.

Selected Client:
Richmond Strikers



Process:
ITAC maintains multiple models and depths of core aeration to fulfill the needs of specific field conditions. Following core aeration, ITAC provides both processing and sweeping services, depending on the needs of the project.

Selected Client:
Steward School

Core Aeration/Processing/Sweeping

Equipment:

- Core Aeration:
 - Toro ProCore 660 aerator w/ John Deere 5085M tractor
 - Toro ProCore 1298 aerator w/ Kioti DK45s tractor
 - John Deere Aercore 2000 w/ John Deere 4066R tractor
 - Toro SR75 HD Deep tine aerator x3 w/ Kioti DK65s tractor
- Core Processing:
 - Toro ProCore processor
 - Harley Rake 3 pt hitch mounted
- Core Sweeping:
 - Harper TV60 Turbo Vacuum/Sweeper
 - Harper TV40 Turbo Vacuum/Sweeper
 - John Deere TC125 core sweeper



Verti-Cutting

Equipment:

- Koro 2000 Field Topmaker equipped w/ verticutting teeth w/ John Deere 6115M tractor
- Koro 1200 Field Topmaker equipped w/ verticutting teeth w/ John Deere 4066R tractor
- Stec Dump trailer w/ John Deere 1070 tractor
- Dakota Dump trailer w/ Kubota L3410 tractor

Process:

Process uses the imants field top maker. Verti blades are precision tuned to remove a smaller percentage of thatch and detritus than in fraze mowing in order to maintain field aesthetics and playability.

Selected Client:

Louisa Highschool



Field Rolling

Equipment:

- CAT skid steer mounted vibratory roller
- Tow behind weighted roller w/ Toro Workman 4200

Process:

ITAC provides field rolling services as needed. Rolling helps smooth imperfections in the athletic playing surface.

Selected Client:

Prince George Highschool



Topdressing

Equipment:

- Dakota Speedresser
- Dakota 440 Turf Tender
- Toro Workman 3200 w/ Dakota 410 turf tender skid unit
- Mill Creek Manufacturing 127SS
- Bobcat T870 tracked skid steer x2
- Bobcat A770 all wheel steer rubber tire skid steer
- Bobcat angle broom skid steer attachment
- Bobcat sweeper skid steer attachment

Process:

ITAC uses the above equipment to evenly distribute a material mix on top of existing turf to introduce new soil and microbes to the existing environment. Topdressing helps to smooth the field surface after aerification.

Selected Client:

Louisa County High School



Sod Installation

Equipment:

- KWMI tracked sod installer
- Magnum M42260 wheeled sod installer

Process:

ITAC equipment is specially selected to minimize the disturbance of existing soil structure during installation following both field repair or renovation.

When sodding, extreme care is required to ensure proper seaming so that turf can return to normal use as quick as possible.

Selected Clients:

Henrico County Division of Recreation and Parks and Hanover County Parks and Recreation



Sod Repair

Equipment:

- Classen walk behind sod cutter
- KWMI 3030 Big roll sod harvester/cutter

Process:

Removal and replacement of affected sod while maintaining proper edge alignment with existing field.

Sprigging

Equipment:

- KWMI SM48 big roll sprig planter x3
- 3pt hitch sprig crimper

Process:

ITAC has the ability to work on multiple sites at the same time with its large inventory of sprigging equipment.

Selected Client:

Henrico County Division of Recreation and Parks



Hydro-Seeding

Equipment:

- Finn 1000 gal tank hydroseeder
- Agri-Metal straw mulcher

Process:

ITAC is able to provide hydro-seeding services as requested using existing inventory.

Drainage Installation and Sand Injection

Equipment:

- TrenchIt Industries laser guided trencher w/ Kioti DK45 tractor
- TrenchIt Industries rock box w/ Kioti RX6010 tractor
- STEC GroundQuake 1000 sand injector
- Bobcat T870 tracked skid steer x2
- Bobcat A770 all wheel steer rubber tire skid steer
- IMANTS TopDrain

Process:

It is important to match drainage technique used to the specific needs and profile of the location. ITAC's trenching drainage equipment utilize laser-guiding to excavate within 1/10".

ITAC is capable of installing both French Drain and Cambridge-style Drainage systems.

With the Cambridge-style system, an additional sand injection process is used. The Sand injection process injects a 3/4" ribbon of sand 10" on center perpendicular to the 50mm pipe drain lines and allows water to flow from the 50mm pipe along the sand slit and evacuate the field. There is also an option to install sand channels with the IMANTS Top Drain. Sand channels are 2" wide and 10 inches deep. The channels are placed every 1 meter on- center.

Selected Clients:

Henrico County Division of Recreation and Parks (French Drainage)
Richmond Strikers (Cambridge-style Drainage)



Silt Fence Installation

Equipment:

- Vermeer RT450 ride on trencher
- Toro Dingo w/ front mounted trencher

Process:

ITAC uses the above equipment to install silt fences as needed for proper site function and client preference.

Homeplate/Pitch Rubber/Pitcher's Mound Construction

Equipment:

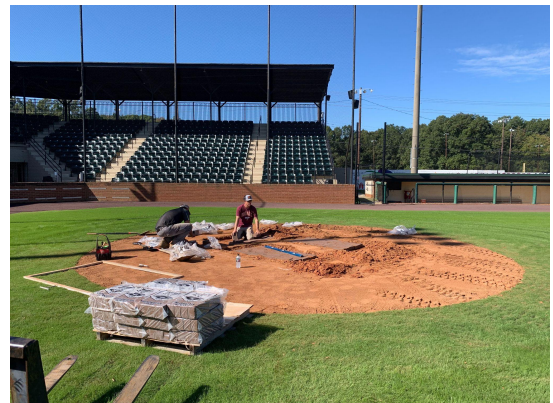
- Mound building pitch template
- Laser equipment

Process:

Utilizing precision-tuned equipment to 1/10 of an inch accuracy, ITAC uses the mound template or other appropriate template to laser-grade and build the pitcher's mound to client/regulation specifications.

Selected Client:

Shepherd Stadium



Base Sleeve Installation

Equipment:

- Drive-in base anchor equipment
- Concrete base anchor install

Process:

ITAC uses the above equipment and site measurements to accurately and securely install base sleeves in the field.

Sod Cutting Infield Lip Removal

Equipment:

- Classen walk behind sod cutter
- Koro 2000 Field Topmaker w/ John Deere 6115M tractor
- Koro 1200 Field Topmaker w/ John Deere 4066R tractor

Process:

Fraze mower joins/removes existing lip and provides smooth transition from infield to outfield.

Selected Clients:

Hampden Sydney
Steward School

Pesticide Application

Equipment:

- Toro Multi-Pro 5800 turf sprayer
- Toro Multi-Pro 5700 D turf sprayer
- Toro Multi-Pro 1100 turf sprayer

Process:

Both company and application staff maintain commercial chemical applicator licenses at the highest level available and only the latest computer equipment is used to ensure proper application rates. Each field is entered into a computer database that tracks and logs chemical and fertilizer treatment schedules. All federal, state, and local safety, PPE and environmental guidelines are met by ITAC staff.

Selected Client:

St. Christopher's School



Bermuda Grass Fertilizer/Lime/Seed Application

Equipment:

- Lely SE1500 Centerline spreader w/ Kioti DK45 tractor
- Vicon tractor mounted spreader w/ Kioti RX6010 tractor
- Vicon skid unit w/ Toro Workman 4200
- Redexim Speedseed 2100 3pt hitch drop seeder
- Lesco walk behind broadcast spreader
- Gandy walk behind drop spreader

Process:

ITAC Certified nutrient management planner ensures that all Department of Conservation and Recreation storm water regulations and Chesapeake Bay Act provisions are enforced and can, if required, draft a new or revised compliant nutrient management plan. Additionally, Cool Season turf fields can be treated with appropriate fertilizer/lime/seed as appropriate.

Selected Client:

Richmond Strikers

Snow Removal on Artificial Turf

Equipment:

- Skid steer mounted pivoting retrofitted snow plows x4
- TYM T1003 tractor w/ front end loader

Process:

ITAC maintains a large inventory of specially-modified snow removal equipment for artificial turf snow removal. Equipment is specifically designed/modified to not damage the turf during snow removal process.

Selected Client:

University of Richmond



Grooming for Artificial Turf

Equipment:

- Vertitop artificial turf sweeper w/ Kioti RX6010 tractor
- FDS 9200 spring tine turf dethatcher

Process:

ITAC owns and maintains specific, specialized equipment for the purpose of artificial turf maintenance.

Selected Client:

Wodberry Forest



Warranties Provided

Following the completion of a work order, ITAC will remedy any discrepancies in performance identified by Division personnel. Beyond the final inspection of a field after the completion of a work order, no additional warranties are provided on the work or materials. Division personnel are always welcome to raise any issues directly with the ITAC supervisor for a given work order.

[Redacted]

[Redacted]

[Redacted]

References and Letters of Recommendation

Indicate below a listing of at least 3 recent references for which you have provided this type of goods/services. Include the date service was furnished and the name and address of the client; and the name and telephone number of the contact person.

1. Date: 2003 to Present_____
- Client: Richmond Strikers_____
- Address: 4202 Park PL Ct D Glen Allen, VA, 23060_____
- Contact Person: Chris Friant_____
- Phone Number: 804-350-0022_____

2. Date: 2005 to Present_____
- Client: Virginia Commonwealth University_____
- Address: 1200 W Broad St., Richmond VA 23284_____
- Contact Person: Tim Lampe_____
- Phone Number: 804-827-1000_____

3. Date: 2007 to Present_____
- Client: College of William and Mary_____
- Address: Sadler Center, 200 Stadium DR, Williamsburg VA 23185_____
- Contact Person: Michael Pritchett_____
- Phone Number: 757-221-3355_____

4. Date: 2021 to Present_____
- Client: Culpeper Parks and Recreation_____
- Address: 302 North Main Street, Culpeper, VA 227601_____
- Contact Person: Joe Koontz_____
- Phone Number: 540-718-1706_____

5. Date: 2016 to Present_____
- Client: Christopher Newport University_____
- Address: 1 Avenue of the Arts, Newport News, VA 23606_____
- Contact Person: Chris Webb_____
- Phone Number: 757-848-8204_____

RICHMOND STRIKERS

To Whom It May Concern:

I am writing this letter in support of Rodney Hopkins and his company, Innovative Turf Application and Consulting (ITAC) for your athletic fields services. I have had the pleasure of working with Rodney for 15 years at the Richmond Strikers Soccer Club. Rodney's knowledge and experience in athletic field management has provided us with top quality fields and facilities. There is no question that Rodney and his team's handling of our facilities has allowed us to grow as a club and also to host one of the country's most prestigious youth soccer tournaments. We are very fortunate to have Rodney working for us!

Rodney and ITAC are on the cutting edge of field management. They are always looking for ways to improve our fields and facilities. They have taken fields that would be unplayable for days after a rain to where we can get on them hours after a rain. They have built fields for us that withstand the wear and tear of a tournament weekend as if no games were even played on them. Their preparation of the fields before games and tournaments is unprecedented in youth soccer.

Not only has Rodney provided us with great field and facility management, he has done so with our budget in mind. He is able to creatively solve our problems in the most efficient and economical way which is important to a non-profit organization. Rodney's sage advice has allowed the Richmond Strikers to provide a quality experience, in a beautiful environment, to its members and tournament guests that is second to none.

Rodney and his ITAC team are in a class by themselves. Their understanding of our needs combined with their professional experience has been a key factor in the growth of the Richmond Strikers Soccer Club. Rodney has provided the club with great ideas, great facilities and great support over the ten years that I have known him. During this time, I have dealt with many businesses and organizations but none of the quality of ITAC. I give Rodney my highest recommendation and hope that you will give him the strong consideration that he deserves.

Sincerely,



Chris Friant

Director of Club Operations
Richmond Strikers Soccer Club

Current Clients and Fields

Below is the current full list of ITAC customers. ITAC provides a range of services for the clients and fields listed below. Within this client list are customers for each of the services that the Henrico Division of Recreation and Parks has requested for this RFP.

Benedictine College Preparatory	
Bryant Park	5 fields
Capitol One West Creek	2 fields
Chancellor High School	4 fields
Christopher Newport University	6 fields
City of Richmond	2 fields
College of William & Mary- Collegiate Athletics	4 fields
Collegiate School	15 fields
Colonial Heights City Schools	2 fields
Courtland High School	6 fields
Cove Creek	6 fields
Douglas S. Freeman High School	3 fields
Enviroscapes	n/a
Fredericksburg Public School	8 fields
Glen Allen High School	6 fields
Goochland County High School	4 fields
Goochland County Parks & Recreation	3 fields
Hanover County Parks & Recreation	24 fields
Henrico County Parks & Recreation	87 fields
Longwood University	3 fields
Louisa County High School	4 fields
Louisa County Little League	5 fields
Louisa County Parks & Recreation	4 fields
Maggie L. Walker Governor's School	1 field
Massaponax High School	6 fields
Midlothian YMCA	1 field
Mills Godwin High School	5 fields
Mineral Baptist Church	1 field
Patrick Henry High School	5 fields
Patrick Henry YMCA	1 field
Powhatan County	17 fields
Powhatan High School	7 fields
Randolph Macon College	5 fields
Richmond Flying Squirrels	1 field

Richmond Strikers	19 fields
Riversbend High School	6 fields
Saint Catherine's School	7 fields
Saint Christopher's School	5 fields
Seven Hills School	1 field
Shady Grove YMCA	1 field
Spotsylvania High School	7 fields
Spotsylvania County Parks & Recreation	12 fields
St. Edwards School	1 field
Steward School	4 fields
Stuarts Draft High School	3 fields
Swift Creek YMCA	1 field
Trinity Episcopal School	5 fields
Tuckahoe YMCA	2 fields
University of Mary Washington	8 fields
University of Richmond	9 fields
University of Virginia	9 fields
Virginia Commonwealth University	2 fields
Washington & Lee University	7 fields
Woodberry Forest	6 fields

Sub-Consultants/Contractors

ITAC will use Montgomery Irrigation as sub-consultants or sub-contractors in the performance of any required irrigation work. Please see Appendix K for Montgomery Irrigation's qualifications. ITAC does have experience coordinating with other authorized client vendors in the event of simultaneous work taking place at a site.

All athletic field maintenance and construction services are performed by ITAC staff and supervised by those mentioned earlier in this response.

Cost Proposal

ITAC has completed the Attachment G as requested in the Division’s RFP for a complete list of proposed pricing for services requested. The completed Attachment G is included below.

Attachment H- Unit Price List/ Equipment List

Offeror shall provide unit pricing that includes labor, equipment, material and supervision.

Offeror shall provide a list and description of all equipment necessary to perform these services. Equipment shall be maintained and in good working order throughout the term of the contract.

Renovation			
Service	Description/Notes	Price per Unit	Unit of Measure
10" Pitcher's Mound	Complete with Premium Clay Bricks, Height set by Laser	\$4,200	Price / Mound
10" Pitcher's Mound	Complete with Premium Bagged Clay, Height set by Laser	\$3,700	Price / Mound
6" Pitcher's Mound Construction	Complete with Premium Clay Bricks, Height set by Laser	\$3,400	Price / Mound
6" Pitcher's Mound Construction	Complete with Premium Bagged Clay, Height set by Laser	\$3,100	Price / Mound
Home Plate Area Construction	Complete with Premium Clay Bricks (Plate Included)	\$3,000	Price / Homeplate
Home Plate Area Construction	Complete with Premium Bagged Clay (Plate Included)	\$2,500	Price / Homeplate
Home Plate Installation	Remove and Install new Home Plate (Plate Included)	\$700	Price each
Pitching Rubber Installation	Remove and Install new Pitching Rubber (Rubber Included)	\$600	Price each
Base Plug Layout and	Layout and Installation of base anchor plugs - Field size	\$700	Price / Infield
Foul Pole Installation	Installation of County Provided Foul Poles	\$2,600	Price / Pair
Infield Lip Removal	Removal with Sod Cutter	\$300	Price / 1,000 sqft
Infield Lip Removal	Removal with Turf Renovator	\$150	Price / 1,000 sqft
Laser Guided Grading	Field Renovation	\$118	Price / 1,000 sqft
Laser Guided Grading	Baseball Infield without Baselines	\$3,700	Price / Infield
Laser Guided Grading	Baseball Infield with Baselines	\$3,900	Price / Infield
Laser Guided Grading	Softball Infield	\$4,000	Price / Infield
Machine Rate	Dozer with Operator	\$165	Price / Hr
Machine Rate	Dozer with Operator & Laser	\$195	Price / Hr
Machine Rate	Mini-Excavator with Operator	\$165	Price / Hr
Machine Rate	Tractor & Non-Powered Implement	\$150	Price / Hr
Machine Rate	Tractor with PTO driven Implement	\$175	Price / Hr
Machine Rate	Skid Steer with Operator	\$160	Price / Hr
On-Site Spoil/Debris/Material	Removal of Spoils/Debris/Material from field to specific area	\$12	Price / Cubic Yard
Reverse Tine Tilling	Bleccavator or approved equivalent	\$81	Price / 1,000 sqft
Power Rake	Finish Power Raking	\$60	Price / 1,000 sqft
Safety Fence Installation	Orange Safety Fence with T-Posts	\$4.75	Price / Linear Foot
Silt Fence Installation	Installation and removal of silt fence after job completion	\$5.75	Price / Linear Foot
Straw Blowing	2 bale of straw per 1,000 sqft	\$35.00	Price / 1,000 sqft
Trenching		\$17	Price / Linear Foot
Hydroseed		\$3,250	Price / Acre
Scoreboard Installation	Scoreboard & Electric not Included (Standard 2 Pole	\$4,500	Price each

Sod/Sprigging			
Service	Description/Notes	Price per Unit	Unit of Measure
Sod Installation - Bermudagrass	Big Roll or Pallet of Bermudagrass sod installation over 1,000	0.59	Price / sqft
Sod Repair < 2,000 sqft	Soil prep included - cut out, level area, install new	\$2.00	Price / sqft
Sod Repair 2,001-5,000 sqft	Soil prep included - cut out, level area, install new	\$1.75	Price / sqft
Sod Repair 5,001-10,000 sqft	Soil prep included - cut out, level area, install new	\$1.40	Price / sqft
Sod Repair 10,001-30,000 sqft	Soil prep included - cut out, level area, install new	\$1.25	Price / sqft
Sod Repair over 30,001 sqft	Soil prep included - cut out, level area, install new	\$1.10	Price / sqft
Sod Stripping	Remove & Grade area to be sodded with small walk-behind	\$165	Price / 1,000 sqft
Sod Stripping	Remove & Grade area to be sodded with large 3-point hitch	\$110	Price / 1,000 sqft
Sod Stripping	Remove & Plane area to be sodded with Koro Top Maker (or	\$138	Price / 1,000 sqft
Sprig Bermudagrass	Big roll sod to sprig - 800 bushels per acre - plastic netting	\$90	Price / 1,000 sqft
Sprig Frazee Mow Spoils	Loose sprig w/ manure-style spreader	\$80	Price / 1,000 sqft
Sprig Crimping	Extra crimping of Bermudagrass after sprig install	\$15	Price / 1,000 sqft
Grow-In	60 day Grow-In of Bermudagrass field to include weed	\$100	Price / 1,000 sqft
Irrigation			
Service	Description/Notes	Price per Unit	Unit of Measure
Irrigation Install	1" MPT x MPT Standard 12" Swing Joint	\$145	Price each
Irrigation Install	1" PVC Lateral Line	\$4.50	Price / Linear Foot
Irrigation Install	1" Control Valve	\$365	Price each
Irrigation Install	1.5" PVC Main/Lateral Line	\$4.10	Price / Linear Foot
Irrigation Install	1.5" Control Valve	\$435	Price each
Irrigation Install	1.5" Flow Meter	\$1,200	Price each
Irrigation Install	1.5" Backflow Preventer with 3-ft x 5-ft Concrete Pad	\$3,050	Price each
Irrigation Install	2" PVC Main/Lateral Line	\$7.75	Price / Linear Foot
Irrigation Install	2" Backflow Preventer with 3-ft x 5-ft Concrete Pad	\$3,250	Price each
Irrigation Install	2" Control Valve	\$510	Price each
Irrigation Install	2" Flow Meter	\$1,450	Price each
Irrigation Install	3" PVC Main/Lateral Line	\$14	Price / Linear Foot
Irrigation Install	3" Flow Meter	\$1,650	Price each
Irrigation Install	3" Backflow Preventer with 4-ft x 6-ft Concrete Pad	\$4,850	Price each
Irrigation Install	Control Valve Wiring	0.6	Price / Linear Foot
Irrigation Install	Controller with internet communication & flow meter	\$4,550	Price each
Irrigation Install	Standard Controller without internet communication	\$1,400	Price each
Irrigation Install	Controller Pedestal	\$645	Price each
Irrigation Install	Commercial Turf Rotor Head with Swing Joint	\$325	Price each
Irrigation Install	Quick Coupler Valve on Threaded Swing Joint with molded	\$475	Price each
Irrigation Install	Booster Pump Installation including WaterBox Model B	\$12,750	Price each
Irrigation Install	Pump enclosure without heat	\$750	Price each
Irrigation Install	10" Round Valve Box - Black/Green Lid	\$95	Price each
Irrigation Install	2' x 3' Valve Box - Black/Green Lid	\$625	Price each
	Pipe fittings - all slip fittings need purple primer and PVC		

Maintenance			
Service	Description/Notes	Price per Unit	Unit of Measure
Baseball Infield Grooming	Finish Drag of Infield Skinned Area using appropriate infield	\$150	Price / Infield
Softball Infield Grooming	Finish Drag of Infield Skinned Area using appropriate infield	\$150	Price / Infield
Core Processing	Pulverizing cores with machine that grinds plugs and returns	\$17	Price / 1,000 sqft
Core Processing	Dragging cores with Drag Mat to pulverize	\$10	Price / 1,000 sqft
Debris Sweeping	Vacuuming debris from athletic field surface	\$20	Price / 1,000 sqft
Edging	Edging infield arcs and baselines	\$800	Price / Infield
Line Trimming	Weed eating	\$62	Price / Hr
Fertilization	Applying granular fertilizer with broadcast spreader	\$3.75 plus materials	Price / 1,000 sqft +
Fertilization	Applying liquid fertilizer with boom sprayer	\$4.00 plus materials	Price / 1,000 sqft +
Lime application	Broadcast spreading of bulk lime	\$5.00 plus materials	Price / 1,000 sqft +
Spraying	Spraying Turf Chemicals	\$4.00 plus materials	Price / 1,000 sqft +
Field Layout	Layout for Line Painting	\$175	Price / Hr
Field Line Painting	1:1 dilution of paint - 4" wide line	\$175	Price / 5 gallon paint
Field Painting (Color)	Paint Entire Field 1 color - Green	\$65	Price / 1,000 sqft
Logo Painting - Multiple Colors	Template supplied by County	\$200	Price / 5 gallon paint
Logo Painting - Single Color	Template supplied by County	\$155	Price / 5 gallon paint
Field Rolling	with Tow behind roller	\$8.50	Price / 1,000 sqft
Field Rolling	with 1 Ton Double Drum Vibratory Roller	\$16	Price / 1,000 sqft
Field Rolling	with 6 Ton Vibratory Roller	\$18	Price / 1,000 sqft
Fraze Mowing	1/2" depth with Field TopMaker with Universe Rotor (or	\$92	Price / 1,000 sqft
Hollow Core Deep Tine Aeration	1-3/8" Tine x 12" max. Depth, 6" x 6" hole spacing	\$24	Price / 1,000 sqft
Hollow Core Shallow Tine	3/4" Tine x 5" max. Depth, 2.5" x 2.5" hole spacing	\$12	Price / 1,000 sqft
Solid Deep Tine Aeration	3/4" tine x 12" max. Depth - 6" x 6" spacing	\$17.50	Price / 1,000 sqft
Solid Shallow Tine Aeration	3/4" Tine x 5" max. Depth, 2.5" x 2.5" hole spacing	\$10	Price / 1,000 sqft
Linear Decompaction	iMants Shockwave 220 (or approved equal)	\$17.50	Price / 1,000 sqft
Recycle Topdressing	iMants Recycling Dresser (or approved equal)	\$30	Price / 1,000 sqft
Verti-Cutting	Koro Top Maker	\$29	Price / 1,000 sqft
Reel Mowing	3/4" height of cut	\$1.75	Price / 1,000 sqft
Rotary Mowing	Wide area rotary mowing - no less than 1-1/2" height of cut	\$1.75	Price / 1,000 sqft
Seeding	Broadcast spreading - seed variety chosen by County	\$4.00 plus materials	Price / 1,000 sqft +
Seeding	Slit seed/drill application - seed variety chosen by County	\$16 plus materials	Price / 1,000 sqft +
Topdressing Luck Stone 80/20	Topdressing to including material	\$106	Price / Ton
Topdressing Luck Stone	Topdressing to including material	\$110	Price / Ton
Topdressing Luck Stone Choice	Topdressing to including material	\$104	Price / Ton
Topdressing Mcgill SportsTurf	Topdressing to including material	\$58	Price / cubic yard
Topdress Mcgill SoilBuilder	Topdressing to including material	\$53	Price / cubic yard
Topdressing Infield Conditioner	Topdressing Turface SlideMaster at 750 lbs per 1000 sqft	\$40 plus materials	Price / 1,000 sqft +
Topdressing Luck Stone	Topdressing to including material	\$167	Price / Ton
Topdressing Luck Stone Sand	Topdressing to including material	\$104.50	Prine / Ton
Topdressing Luck Stone	Topdressing to including material	\$96	Price / Ton
Topdressing Luck Stone Charcoal	Topdressing to including material	\$112	Price / Ton

Drainage			
Service	Description/Notes	Price per Unit	Unit of Measure
Catch Basin Installation	12" Square grate	\$200	Price each
Flat Panel Drainage	1" X 12" Panels	\$6.50	Price / Linear Foot
French Drain	4" HDPE pipe with gravel - performed with laser guided	\$16.50	Price / Linear Foot
French Drain	6" HDPE pipe with gravel - performed with laser guided	\$24.50	Price / Linear Foot
French Drain	10" HDPE pipe with gravel - performed with laser guided	\$26.50	Price / Linear Foot
French Drain	12" HDPE pipe with gravel - performed with laser guided	\$32.50	Price / Linear Foot
Pipe Fittings	HDPE pipe fittings	\$85	Price each
Sand Channel Drainage with	4" channel on 8' centers with 50mm pipe, gravel then sand	\$0.98	Price / sqft
Sand Channel Drainage without	2" channel on 3" centers with 10" max. depth	\$0.85	Price / sqft
Sand Injection/Sand Slit	1/2" slit on 10" centers with 6" depth	\$0.48	Price / sqft
Artificial Turf			
Service	Description/Notes	Price per Unit	Unit of Measure
Artificial Turf Grooming	Drag Brushing to erect existing fibers on routine maintenance	\$13.00	Price / 1,000 sqft
Artificial Turf Reconditioning	Redexim Verti-top 1500 (or approved equal)	\$27	Price / 1,000 sqft
Artificial Turf Snow Removal	Removal with plow equipped with special cutting edge to	\$38	Price / 1,000 sqft
Topdressing Corkonut Infill	Topdressing to including material - applied with Campey	0.34/pound plus	Price / 1,000 sqft +
Topdressing Crumb Rubber	Topdressing to include material - applied with Campey	0.25/pound plus	Price / 1,000 sqft +
Miscellaneous			
Service	Description/Notes	Price per Unit	Unit of Measure
Auger/Hole Drilling	Up to 2' diameter	\$225	Price / hole
Disassembled Bedknife Gridding		\$19.50	Price / bedknife
Disassembled Greensmower		\$92	Price / reel
Disassembled Fairway Reel		\$110.50	Price / reel
Full Service Fairway Reel Grind		\$150	Price / reel
Full Service Greensmower Reel		\$125	Price / reel
Full Service Walk Greensmower		\$125	Price / reel
Engineering	Project Manager	\$220	Price / Hr
Engineering	Designer	\$150	Price / Hr
Engineering	Principal	\$360	Price / Hr
Engineering	Survey Technician	\$145	Price / Hr
Engineering	2 Man Crew	\$255	Price / Hr
Laser Leveled Concrete Pad	4" Broom Finish	\$12.50	Price / sqft
Laser Leveled Stone Pad	4" Depth Stone on Fabric	\$5.00	Price / sqft
Trucking/Haul Rate	Less than 50 miles (load and dispose)	\$195	Price / Hr
Trucking/Haul Rate	Greater than 50 miles (load and dispose)	\$12.00	Price / Loaded Mile

*Contractor shall be responsible for damage to existing utilities and structures due to negligence and/or misuse by his/her crews or equipment.

* Contractor must perform cleaning during installation of the work and upon completion of the work. Contractor must remove from site all excess materials, soil, debris, and equipment.

Pricing Scenario

Please use the rates listed above to complete the scenario. This scenario is for evaluation purposes only.

Scenario: Renovation of an existing 68,00 sqft softball field:

Line Item	Description of Services	Price
Outfield: 55,000 sqft.		
1	Reverse Tine Tilling of existing vegetation	\$4,455.00
2	Laser Guided Grading for Field Renovation to rough	\$6,490.00
3	Topdressing 80 cubic yards of McGill SoilBuilder compost	\$4,240.00
4	Reverse Tine Tilling of compost	\$4,455.00
5	Laser Guided Grading for Field Renovation to finish grade	
6	Sprigging Bermudagrass	\$4,950.00
Infield Dirt: 13,000 sqft		
7	Topdressing 200 tons of Luck Stone's Choice infield mix	\$20,800.00
8	Laser Guided Grading of Softball Infield	\$4,000.00
9	Topdressing Infield Conditioner at 750 pounds per 1,000 sqft	\$4,556.50
Total Price of Items 1-9		\$53,946.50

Invoicing Process

ITAC invoices each work order upon completion with the amount due in-full within 45 days of receipt of invoice. Per the terms of the RFP as stated on page 5, "Invoices", ITAC will mail invoices for completed work to Mr. Steve Ruckman. Should the Division prefer to receive invoices via email, ITAC would be happy to provide that as well. Credit cards will not be accepted.

Appendices

With the exception of information included as figures within the above proposal, ITAC has included all other required and supporting documentation as appendices in the pages below. Each appendix is lettered and noted within the table of contents on page two of this response as well as in the space below.

- Appendix A: Resume for Rodney Hopkins, ITAC Owner
- Appendix B: Resume for Jason Melton, ITAC General Manager
- Appendix C: Resume for DP Seay, ITAC Superintendent of Construction Services
- Appendix D: Resume for Rick Waters, ITAC Maintenance Technician
- Appendix E: Copy of ITAC's Virginia Contractor's License
- Appendix F: ITAC Pesticide Business License
- Appendix G: Responsible Land Disturber Certificate
- Appendix H: Rodney Hopkins Pesticide Applicator Certificate
- Appendix I: Jason Melton Certificate – Certified Nutrient Management Planner
- Appendix J: Offeror Equipment List
- Appendix K: Subcontractor Information
- Appendix L: MSDS Sheets

Appendix A – Resume for Rodney Hopkins

Rodney A. Hopkins
3018 Black Friar Lane
Sandy Hook, VA 23153
(804) 556-3213

Education and Related Training

<p>May 1993, Agriculture Technology Program: Landscape and Turf Management Virginia Tech University, Blacksburg, VA</p> <p>2004-Present ongoing training at the annual National Sports Turf Managers Conference</p> <p>2000 GCSAA National Conference New Orleans, LA</p> <p>1997 Toro Osmac Irrigation Training Abelene, TX</p> <p>1995 Toro Equipment Maintenance School Richmond, VA</p>	<p>1995 Toro Irrigation School Richmond, VA</p> <p>2014 Visited European Premier Clubs and imants factory to study European athletic field maintenance practices</p> <p>2015-Present Cooperative Research with VA Tech On Spring Deed Spot in Bermuda</p> <p>2005 Toro Pro Club</p>
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Licenses

Category 3-C Commercial Chemical Applicators
VA Class A Commercial Drivers License
VA Class A Contractor

Skills

Sports Field Renovation	Troubleshooting and repairing irrigation problems
Preparing capital and operating budgets	Designing and installing irrigation
Following budget guidelines	Reel grinding
Competitive Price bidding	Spraying pesticides and fertilizers
Maintaining Artificial Sports Field	Operating and repairing maintenance equipment
Record keeping	Maintaining Premium Athletic Surfaces
Operating and programming computers	Maintaining new USGA specification greens
Supervising and managing maintenance staff	Maintaining Bentgrass in transitional zone
Scheduling equipment maintenance	Golf course renovation and reconstruction
New golf course construction	Managing foreign labor

Honors and Activities

Member, Sports Turf grass Managers Association Of America	Board Member, Virginia Sports Turf Managers Association
Member, Virginia Turf Grass Council Board Member Louisa Little League	Deacon, Louisa Baptist Church Pastor search Team Louisa Baptist Church

Work Experience

January 2005 – Present Owner ITAC Inc.

November 2000 – January 2007
Richmond Strikers Soccer Club
4164 Innslake Drive, Glen Allen, VA 23060
Scott Turner: Executive Director

October 1999 – October 2000
Kinloch Golf Club, Manakin-Sabot, VA
Assistant Golf Course Superintendent
Golf Course Superintendent: Pete Wendt

January 1995 – October 1999
Salisbury Country Club, Midlothian, VA
Assistant Golf Course Superintendent
Golf Course Superintendent: Albert Myers

May 1993 – January 1995
Tanglewood Shores Country Club, Bracey, VA
Golf Course Superintendent
Greens Committee Chairman: Ray Shurling

Appendix B - Resume for Jason Melton

Jason Melton

Experience

2019 - Present General Manager ITAC Inc.

2011 – 2019 Henrico Department of Recreation and Parks

PARK SERVICES DIVISION SUPERVISOR – TURF & GROUNDS SERVICES

- Supervise the construction, renovation and maintenance of sports fields
 - o 87 irrigated athletic fields (natural grass)
 - o 28 lawn and landscaped areas
 - o 6 clay tennis courts
 - o 62 irrigation control panels
 - o 36 field renovations in the last 8 years
- Research, recommend and purchase products, services and equipment dealing with sports fields and grounds
- Write specifications and requisitions for athletic field construction and renovation
- Manage baseball and softball skinned areas to include; infield dragging, marking, pitching mound and batter's box maintenance
- Create and oversee agronomic practices to include: mowing, fertilization, irrigation, cultivation and pest control
- Repair and maintain hybrid Bermuda grass in a high traffic environment
- Develop and implement Nutrient Management Plans to reduce impacts on the environment
- Interview, hire, train, direct and supervise a full-time staff of 42 as well as a seasonal staff of 27.
- Communicate regularly with the Park Services Manager to discuss activities, goals and plans
- Assist in managing snow removal operations and any other natural disasters
- Provide updates and presentations to the Parks and Recreation Advisory Commission
- Meet with citizens and user groups to provide customer service as needed

**2004 – 2011 Henrico Department of Recreation and Parks
Assistant Sports Turf Manager**

- Supervised turf management programs, athletic field maintenance and mowing operations
- Performed all pesticide and fertilizer applications
- Prepared work orders for job assignments
- Trained and instructed new employees
- Ensured maintenance and safety inspections were being conducted
- Provided assistance in construction of athletic fields

**2001 - 2004 Belmont Golf Course
Equipment Operator III**

- Performed all spray applications
- Completed all spraying records and pesticide inventory
- Supervised, assigned and assisted coworkers in carrying out daily assignments
- Involved in all aspects of golf course management

**1998 - 2001 The Hollows Golf Course
Grounds Maintenance**

- Maintained grounds and equipment
- Established and repaired irrigation lines
- Supervised summer employees
- Performed spray applications as a registered technician

Education

B.S., Wildlife Science December 1997

Virginia Polytechnic Institute and State University

Qualifications and Activities

- Board Member of the Virginia Chapter Sports Turf Managers Association
- Member of the Virginia Turfgrass Council
- Member of the Sports Turf Managers Association
- Virginia DCR Certified Nutrient Management Planner
- Virginia Commercial Pesticide Applicator (3A, 3B)
- Virginia Certified Crew Chief
- Virginia Tech's Turfgrass Short Course
- 2017 Toro's Sports Field and Grounds Forum Attendee

Appendix C - Resume for DP Seay

DP Seay | 235 Sam Boyd Rd, Louisa, VA 23093 | dp.seay@itacturf.com

SKILLS

Has the skills needed to communicate with customers at all levels. Can effectively and efficiently operate most equipment used in the turf industry.

EXPERIENCE

DMS Corporation- Foreman

June 1993-September 2008

- Crew leader
- Designed, bid, and performed labor necessary to complete concrete projects.

Stone Center- Salesman

October 2008- August 2010

- Through training, became very knowledgeable of all materials in the hardscape industry
- Scheduled and managed the ordering and delivery of all materials coming in to and going out of the facility

Louisa County Public Schools-Certified Maintenance Technician

September 2010-February 2016

- Certified Water treatment operator
- In charge of all grounds maintenance/projects

Innovative Turf Applications and Consulting-Assistant Manager

March 2016-Current

- Help oversee the daily operations of the business
- Perform most aspects of field renovations and new field construction
- Perform the tasks needed to calibrate and operate fertilizing equipment

EDUCATION

- Louisa County High School - August 1989-June 1993
- Turfgrass Short Course administered by Virginia Tech - December 2016
- Fertilizer Applicator Certification Training administered by Virginia Cooperative Extension - April 2017

CERTIFICATIONS

VDACS Certified Fertilizer Applicator

Virginia Commercial Driver License-Class A

Appendix D - Resume for Rick Waters

Richard A Waters

5016 Castle Point Ct.
Glen Allen , Va. 23060
804-840-5982
rick.waters@itacturf.com

BACKGROUND

At present, I have been involved in the Green Industry for 43 years, mainly in Turf Equipment Maintenance and Repair. I have also worked in Golf Course Construction, and as a parts counterman for Diesel Engines and Landscape/Turf Equipment.

EXPERIENCE

ITAC, Inc. - Gum Spring, Va. - Turf Equipment Technician 2010- Present

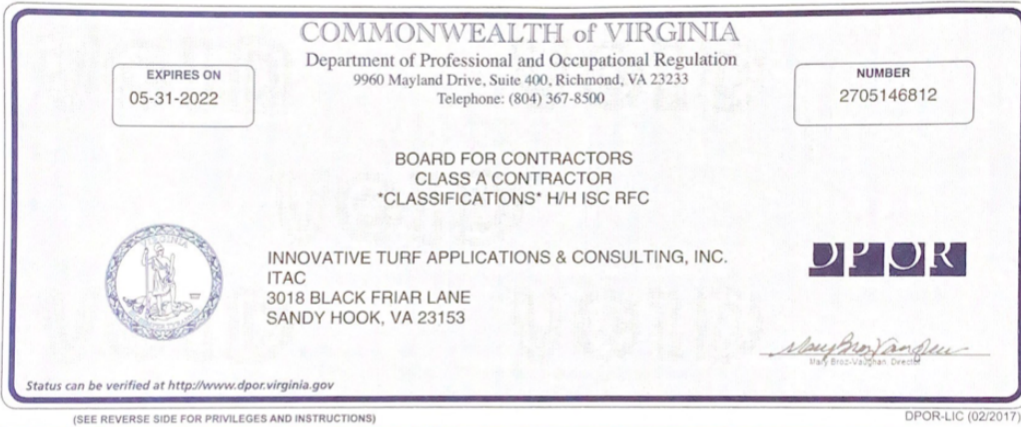
- Maintain and repair all types and brands of Turf Equipment used in Athletic Field Construction and Maintenance. Repair both company and customer Turf Equipment
- Specialize in reel, hydraulic, engine and electrical diagnostics and repairs.
- Operate mowers, spread fertilizer, and operate chemical sprayers on athletic fields.

Smith Turf and Irrigation - Richmond, Va. - Commercial Products Shop Foreman and Service Manager

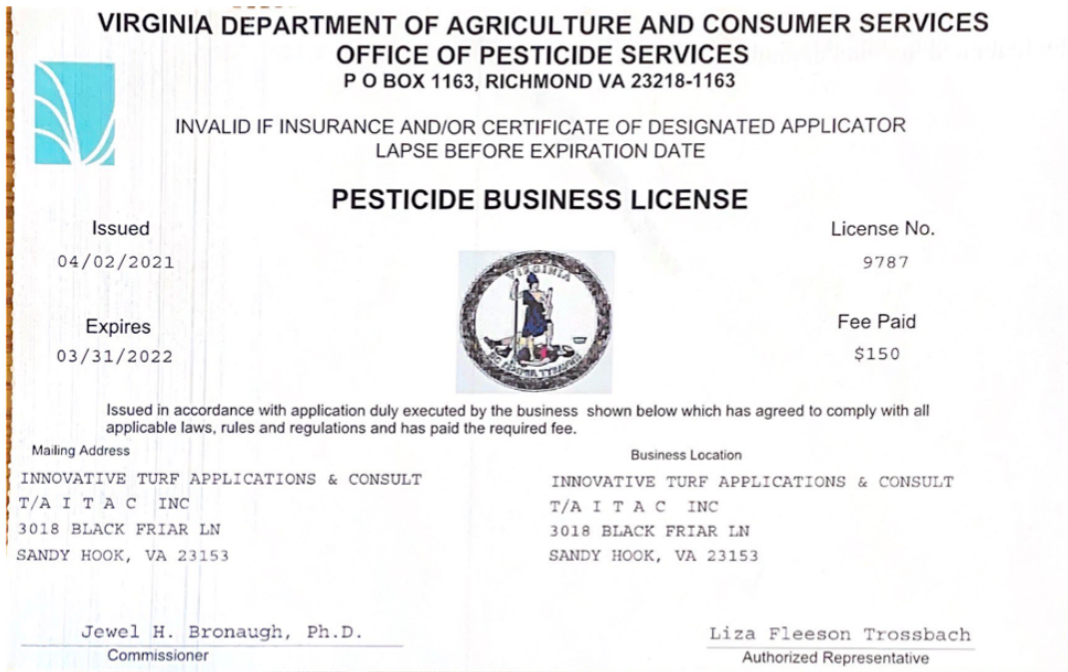
1978 - 2010

- Worked as a parts counter person, service technician, service writer, shop foreman and service manager for both golf and landscape products for the regional Toro Distributor.
- Supervised technicians, advised customers on shop repairs, answered customers repair questions, handled all service department paperwork.
- Organized annual Toro Commercial Product Service Schools, taught classes for golf technicians; presented maintenance classes at various Turfgrass Seminars.
- Handled warranty claims for various manufacturers.

Appendix E - ITAC Virginia Contractor's License



Appendix F - ITAC Pesticide Business License



Appendix G - Responsible Land Disturber Certificate



COMMONWEALTH OF VIRGINIA
State Water Control Board
1111 East Main Street, Richmond, Virginia 23219

RESPONSIBLE LAND DISTURBER

Rodney A Hopkins

CERTIFICATE NUMBER
RLD16024


EXPIRATION DATE
8/18/2023



Appendix H - Rodney Hopkins Pesticide Applicator Certificate


VIRGINIA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES
P O BOX 1163, RICHMOND VA 23218-1163

PESTICIDE APPLICATOR CERTIFICATE

Issued	COMMERCIAL	Fee Paid	Certificate
07/21/2020	FOR BL# 9787		54798-C
Expires			
06/30/2022			

Issued in accordance with application duly executed by the person shown below who has agreed to comply with all applicable laws, rules and regulations

RODNEY A HOPKINS
INNOVATIVE TURF APPLICATIONS & CONSULT
3018 BLACK FRIAR LN
SANDY HOOK, VA 23153



Jewel H. Bronaugh, Ph.D.
Commissioner

Liza Fleeson Trossbach
Authorized Representative

Appendix I - Jason Melton Certificate – Certified Nutrient Management Planner



Appendix J - Offeror Equipment List

PREFERRED EQUIPMENT	EQUIPMENT TO BE USED BY CONTRACTOR
<p>Fraze mowing per 1000 sq. ft. – Spoils dumped on-site (no more than 200 yds. from field) KoroFieldTopMaker or proven equivalent</p>	<ul style="list-style-type: none"> • Koro 2000 Field Topmaker w/ John Deere 6115M tractor • Koro 1200 Field Topmaker w/ John Deere 4066R tractor • Stec Dump trailer w/ John Deere 1070 tractor • Dakota Dump trailer w/ Kubota L3410 tractor
<p>Field stripping per 1000 sq. ft. – up to 2” depth with spoils dumped on – site (no more than 200 yds. from field) KoroFieldTopMaker or proven equivalent</p>	<ul style="list-style-type: none"> • Koro 2000 Field Topmaker w/ John Deere 6115M tractor • Koro 1200 Field Topmaker w/ John Deere 4066R tractor • Stec 710 Dump trailer w/ John Deere 1070 tractor • Dakota 550 Dump trailer w/ Kubota L3410 tractor • KWMI 3030 Big roll sod harvester/cutter
<p>Spoils/Debris Material Haul per cubic yard – removal and legal disposal off site</p>	<ul style="list-style-type: none"> • Bobcat T870 tracked skid steer x2 • Bobcat A770 all wheel steer rubber tire skid steer • Bobcat angle broom skid steer attachment • Bobcat sweeper skid steer attachment • Tandem Axel Dump Truck
<p>Spoils/Debris Material Haul per cubic yard – dumped within 400 yards of work location</p>	<ul style="list-style-type: none"> • Dakota Turf Dump Trailer • Bobcat A770 all wheel steer rubber tire skid steer
<p>Recycle Top Dressing per 1000 sq. ft. – Koro Recycling Dresser</p>	<ul style="list-style-type: none"> • Koro Recycle Dresser 1900 • Harper TV60 Turbo Vacuum/Sweeper • Harper TV40 Turbo Vacuum/Sweeper • Harley Rake 3 pt hitch mounted

<p>Linear decompaction per 1000 sq. ft. – Imants Shockwave</p>	<ul style="list-style-type: none"> • Koro Shockwave 2.2 x2 w/ John Deere 5085M • Koro Shockwave 2.1 w/ John Deere 4066R
<p>Bleccavate per 1000 sq. ft.</p>	<ul style="list-style-type: none"> • Stecavator SV250 8’ reverse tine tiller • Rotadairon RX250 9’ reverse tine tiller • Rotadairon RDH60 skid steer mounted reverse tine tiller • Toro Dingo mounted soil cultivator
<p>Hydraulic blading per 1000 sq. ft.</p>	<ul style="list-style-type: none"> • Bobcat skid steer mounted 8’ laser grading blade • Bobcat skid steer mounted 9’ laser grading blade • Bobcat skid steer mounted 7’ laser grading box blade • Level Best PL84D skid steer mounted 7’ laser grading box blade • Level Best Dingo mounted laser grading box blade
<p>Solid tine aeration per 1000 sq. ft. – Performed with Toro ProCore Aerator or proven equivalent using 5” long and 3/4” outside diameter tines, any spacing</p>	<ul style="list-style-type: none"> • 1st Products AE60 aera-vator • 1st Products AE60 agri-vator • John Deere Aercore 2000 • Toro Procore 660 aerator • Toro Procore 1298 aerator • Toro SR75 HD Deep tine aerator x3
<p>Core aeration per 1000 sq. ft. – Performed with a Toro-ProCore Aerator or equivalent using 4” long and 3/4” diameter side-eject hollow tines, any spacing.</p>	<ul style="list-style-type: none"> • Toro Procore 660 aerator w/ John Deere 5085M tractor • Toro Procore 1298 aerator w/ Kioti DK45s tractor • John Deere Aercore 2000 w/ John Deere 4066R tractor
<p>Deep coring tine aeration per 1000 sq. ft. – performed at a 6-10” depth, any spacing</p>	<ul style="list-style-type: none"> • Toro SR75 HD Deep tine aerator x3 w/ Kioti DK65s tractor
<p>Deep solid tine aeration per 1000 sq. ft. – performed at a 6-10” depth, any spacing</p>	<ul style="list-style-type: none"> • Toro SR75 HD Deep tine aerator x3 w/ Kioti DK65s tractor

Core processing per 1000 sq. ft. – Performed with a Toro Core Processor or equivalent	<ul style="list-style-type: none"> • Toro ProCore processor • Harley Rake 3 pt hitch mounted
Debris sweeping per 1000 sq. ft. – Performed with a Toro Core Sweeper or equivalent – dumped on site within 400 yards of work location	<ul style="list-style-type: none"> • Harper TV60 Turbo Vacuum/Sweeper • Harper TV40 Turbo Vacuum/Sweeper • John Deere TC125 core sweeper
Verti-Cutting per 1000 sq. ft. using 60” or wider verticutter – up to 1” depth	<ul style="list-style-type: none"> • Harper TV60 Turbo Vacuum/Sweeper w/verticutting rotor • Turf Renovator
Verti-cutting with Koro Field Topmaker using 5mm teeth per 1000 sq. ft.	<ul style="list-style-type: none"> • Koro 2000 Field Topmaker equipped w/ verticutting teeth w/ John Deere 6115M tractor • Koro® 1200 Field Topmaker equipped w/ verticutting teeth w/ John Deere™ 5090M tractor • Stec Dump trailer w/ John Deere 1070 tractor • Dakota Dump trailer w/ Kubota L3410 tractor
Top-Dressing McGill Soil builder Compost - Performed with a Raycam Speedresser or proven equivalent per cubic yd.	<ul style="list-style-type: none"> • Dakota Speedresser • Dakota 440 Turf Tender • Toro Workman 3200 w/ Dakota 410 turf tender skid unit • Mill Creek Manufacturing 127SS • Bobcat T870 tracked skid steer x2 • Bobcat A770 all wheel steer rubber tire skid steer • Bobcat angle broom skid steer attachment • Bobcat sweeper skid steer attachment
Top-Dressing McGill Sports Turf Compost- Performed with a Raycam Speedresser or proven equivalent per cubic yd.	
Top-Dressing Luck Stone Top-Dressing sand - Performed with a Raycam Speedresser or proven equivalent per ton	
Top-Dressing Corkonut Infill - Performed with a Raycam Speedresser or proven equivalent per ton	

Top-Dressing using owner supplied topdressing mix performed with a Raycam Speedresser or proven equivalent per ton	
Laser Grading of Softball Infield	<ul style="list-style-type: none"> • Level Best PL84D skid steer mounted 7' laser grading box blade • Level Best Dingo mounted laser grading box blade
Laser Grading of Baseball Infield	<ul style="list-style-type: none"> • Level Best PL84D skid steer mounted 7' laser grading box blade • Level Best Dingo mounted laser grading box blade

Hybrid Bermuda grass Sod Installation per sq. ft. - Only Big Roll sod installation equipment such as the Woerner Manufacturing, Inc. Model 4822 Sod Installer or proven equivalent	<ul style="list-style-type: none"> • KWMI tracked sod installer • Magnum M42260 wheeled sod installer
Sod repair per sq. ft. – cut out sod, level area, install new sod < 2000 sq. ft. 2000 – 5000 sq. ft. 5000-10,000 sq. ft. 10,000-30,000 sq. ft. >30,000 sq. ft.	<ul style="list-style-type: none"> • Classen walk behind sod cutter • KWMI 3030 Big roll sod harvester/cutter • Koro 2000 Field Topmaker w/ John Deere 6115M tractor • Koro 1200 Field Topmaker w/ John Deere 4066R tractor
Sprigging Hybrid Bermuda grass per 1000 sq. ft. – Only Big Roll sprig installation equipment will be allowed for the sprig installation. Sprigs should be planted at a minimum of 800 bushels per acre. Sprigs should be planted with a machine that will push the sprigs into the prepared soil bed at a minimum of 3 inches apart on center. All plastic netting shall be removed from big rolls during the sprig installation process. Sprigs furnished by Contractor shall be planted using material from big	<ul style="list-style-type: none"> • KWMI SM48 big roll sprig planter x3 • 3pt hitch sprig crimper

roll sod.	
French drain installation per linear foot- Performed with laser guided equipment using clean stone and 4” perforated pipe with sock	<ul style="list-style-type: none"> • TrenchIt Industries laser guided trencher w/ Kioti DK45 tractor • TrenchIt Industries rock box w/ Kioti RX6010 tractor • STEC GroundQuake 1000 sand injector • Bobcat T870 tracked skid steer x2 • Bobcat A770 all wheel steer rubber tire skid steer
French drain installation per linear foot- Performed with laser guided equipment using EZ Drain gravel free prefabricated pipe	<ul style="list-style-type: none"> • TrenchIt Industries laser guided trencher w/ Kioti DK45 tractor • TrenchIt Industries rock box w/ Kioti RX6010 tractor • STEC GroundQuake 1000 sand injector • Bobcat T870 tracked skid steer x2 • Bobcat A770 all wheel steer rubber tire skid steer
Drainage per sq. ft.- 50 mm pipe on 8 foot spacing	<ul style="list-style-type: none"> • TrenchIt Industries laser guided trencher w/ Kioti DK45 tractor • TrenchIt Industries rock box w/ Kioti RX6010 tractor • STEC GroundQuake 1000 sand injector • Bobcat T870 tracked skid steer x2 • Bobcat A770 all wheel steer rubber tire skid steer
Sand Slit Drainage Installation – 1.5” channel every 20” – using Koro TopDrain or proven equivalent or every 40”	<ul style="list-style-type: none"> • Koro Topdrain
Base sleeve installation – per sleeve and supplied by University	<ul style="list-style-type: none"> • Drive-in base anchor equipment • Concrete base anchor install

<p>Sod cutting Infield lip removal per square foot</p>	<ul style="list-style-type: none">• Classen walk behind sod cutter• Koro® 2000 Field Topmaker w/ John Deere™ 6115M tractor• Koro® 1200 Field Topmaker w/ John Deere™ 4066R tractor• Turf renovator w/ John Deere™ 4066R tractor
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Appendix K - Subcontractor


COMMONWEALTH of VIRGINIA
Department of Professional and Occupational Regulation
9960 Mayland Drive, Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

EXPIRES ON
08-31-2023

NUMBER
2705030206

**BOARD FOR CONTRACTORS
CLASS A CONTRACTOR
CLASSIFICATIONS ISC**

 **BEEM IRRIGATION INC
MONTGOMERY IRRIGATION
7935 OLD JESSUP ROAD
JESSUP, MD 20794**




Mary Broz-Vaughan, Director
Mary Broz-Vaughan, Director

Status can be verified at <http://www.dpor.virginia.gov>


(SEE REVERSE SIDE FOR PRIVILEGES AND INSTRUCTIONS)

DPOR-LIC (02/2017)
(DETACH HERE)

 **COMMONWEALTH of VIRGINIA**
Department of Professional and Occupational Regulation

**CLASS A BOARD FOR CONTRACTORS
CONTRACTOR**

CLASSIFICATIONS ISC
NUMBER: 2705030206 EXPIRES: 08-31-2023

 (FOLD)

**BEEM IRRIGATION INC
MONTGOMERY IRRIGATION
7935 OLD JESSUP ROAD
JESSUP, MD 20794**

Status can be verified at <http://www.dpor.virginia.gov>

DPOR-PC (02/2017)



MONTGOMERY

i r r i g a t i o n

Member Irrigation Association & Landscape Contractors Association
www.montgomeryirrigation.biz



Company Overview

- In Business Since 1991
- Maintain 65-70 Employees
- Maintain 28 Crews on a daily basis
- Specializing in Large Commercial and Athletic Field Installation, Maintenance, and Management

Management Team Member Experience and Qualifications

- Tim Jacobs- President
 - Owner/Operator Since 1991
 - Started in the Landscape Industry Prior to Specializing in Irrigation
 - Built Montgomery Irrigation from the Ground Up to a Multi-Million Dollar Organization
 - Responsible for Putting Together a Team of Highly Qualified Irrigation Professionals
- Scott Sadler- Maryland Sales Manager
 - 18 Years with Montgomery Irrigation
 - 26 Years in the Irrigation Industry
 - (CIC) Certified Irrigation Contractor
 - Toro Sentinel Certified
 - Irrigation Association Water Sense Partner
- George Dixon- Maryland Service Manager
 - 26 Years with Montgomery Irrigation
 - Toro Sentinel Certified
 - HDPE Certified
- Scott Collins- Richmond Branch Manager and Service Manager
 - 29 Years with Montgomery Irrigation
 - Backflow Testing Certified
 - (CIC) Certified Irrigation Contractor
 - Toro Sentinel Certified



MONTGOMERY

i r r i g a t i o n

Member Irrigation Association & Landscape Contractors Association
www.montgomeryirrigation.biz



- Jeff Ramey- Richmond Production Manager
 - 16 Years with Montgomery Irrigation
 - 32 Years in the Irrigation Industry
 - Specializes in Irrigation Installation Production Management of Large Commercial and Athletic Field Irrigation
- Eddie Thompson- Richmond Sales Manager
 - 6 Years with Montgomery Irrigation
 - 36 Years in the Irrigation Industry
 - 12 Years in New Golf Course Irrigation Installation and Golf Course Renovation
 - Specializes in Large Project Sales and Management
 - Training in Irrigation Design, Installation, Pumps, and Control Systems
- Chris Baber-Richmond Service Manager
 - 5 Years with Montgomery Irrigation
 - 17 Years in the Irrigation Industry
 - (CIC) Certified Irrigation Contractor
 - (CLIA) Certified Landscape Irrigation Auditor
 - Specializes in Large Commercial Control Systems Programming and Water Management
 - Backflow Preventer Testing Certified
- Pat Cleary-Eastern Shore Branch Manager
 - 4 Years with Montgomery Irrigation
 - (CIT) Certified Irrigation Technician

Irrigation Installation Foremen

- Total number of Foremen-6
- Average Years of Experience-15 Years
- Average Years with Montgomery Irrigation-9 Years

Irrigation Service Technicians

- Total number of Service Technicians-22
- Average Years of Experience- 15 Years
- Average Years with Montgomery Irrigation-10 Years

Irrigation Laborers

- Total Number of Laborers-33
- Average years of Experience-10 Years
- Average Years with Montgomery Irrigation-8 Years

Appendix L - MSDS Sheets

MONSANTO COMPANY
Ranger® PRO Herbicide

Version: 1.0

Page: 1 / 8
Effective date: 01/08/2004

<p style="text-align: center;">MONSANTO COMPANY Material Safety Data Sheet Commercial Product</p>
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1. PRODUCT AND COMPANY IDENTIFICATION

Product name

Ranger® PRO Herbicide

EPA Reg. No.

524-517

Product use

Herbicide

Chemical name

Not applicable.

Synonyms

None.

Company

MONSANTO COMPANY, 800 N. Lindbergh Blvd., St. Louis, MO, 63167

Telephone: 800-332-3111, **Fax:** 314-694-5557

Emergency numbers

FOR CHEMICAL EMERGENCY, SPILL LEAK, FIRE, EXPOSURE, OR ACCIDENT Call CHEMTREC - Day or Night: 1-800-424-9300 toll free in the continental U.S., Puerto Rico, Canada, or Virgin Islands. For calls originating elsewhere: 703-527-3887 (collect calls accepted).

FOR MEDICAL EMERGENCY - Day or Night: 314-694-4000 (collect calls accepted).

2. COMPOSITION/INFORMATION ON INGREDIENTS

Active ingredient

Isopropylamine salt of N-(phosphonomethyl)glycine; {Isopropylamine salt of glyphosate}

Composition

COMPONENT	CAS No.	% by weight (approximate)
Isopropylamine salt of glyphosate	38641-94-0	41
Other ingredients		59

The specific chemical identity is being withheld because it is trade secret information of Monsanto Company.

OSHA Status

This product is hazardous according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

3. HAZARDS IDENTIFICATION

Emergency overview

Appearance and odour (colour/form/odour): Amber / Liquid / Sweet

CAUTION!
CAUSES EYE IRRITATION

Potential health effects

Likely routes of exposure

Skin contact, eye contact

Eye contact, short term

May cause temporary eye irritation.

MONSANTO COMPANY
Ranger® PRO Herbicide

Version: 1.0

Page: 2 / 8
Effective date: 01/08/2004

Skin contact, short term

Not expected to produce significant adverse effects when recommended use instructions are followed.

Inhalation, short term

Not expected to produce significant adverse effects when recommended use instructions are followed.

Refer to section 11 for toxicological and section 12 for environmental information.

4. FIRST AID MEASURES

Eye contact

If in eyes, hold eye open and rinse slowly and gently for 15-20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing.

Skin contact

Take off contaminated clothing, wristwatch, jewellery.
Wash affected skin with plenty of water.
Wash clothes and clean shoes before re-use.

Inhalation

Remove to fresh air.

Ingestion

Immediately offer water to drink.
Do NOT induce vomiting unless directed by medical personnel.
If symptoms occur, get medical attention.

Advice to doctors

This product is not an inhibitor of cholinesterase.

Antidote

Treatment with atropine and oximes is not indicated.

5. FIRE-FIGHTING MEASURES

Flash point

None.

Extinguishing media

Recommended: Water, foam, dry chemical, carbon dioxide (CO₂)

Unusual fire and explosion hazards

Minimise use of water to prevent environmental contamination.
Environmental precautions: see section 6.

Hazardous products of combustion

Carbon monoxide (CO), phosphorus oxides (P_xO_y), nitrogen oxides (NO_x)

Fire fighting equipment

Self-contained breathing apparatus.
Equipment should be thoroughly decontaminated after use.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protection recommended in section 8.

MONSANTO COMPANY
Ranger® PRO Herbicide

Version: 1.0

Page: 3 / 8
Effective date: 01/08/2004

Environmental precautions

SMALL QUANTITIES:

Low environmental hazard.

LARGE QUANTITIES:

Minimise spread.

Keep out of drains, sewers, ditches and water ways.

Notify authorities.

Methods for cleaning up

SMALL QUANTITIES:

Flush spill area with water.

LARGE QUANTITIES:

Absorb in earth, sand or absorbent material.

Dig up heavily contaminated soil.

Collect in containers for disposal.

Refer to section 7 for types of containers.

Flush residues with small quantities of water.

Minimise use of water to prevent environmental contamination.

Refer to section 13 for disposal of spilled material.

7. HANDLING AND STORAGE

Good industrial practice in housekeeping and personal hygiene should be followed.

Handling

- When using do not eat, drink or smoke.
- Wash hands thoroughly after handling or contact.
- Thoroughly clean equipment after use.
- Do not contaminate drains, sewers and water ways when disposing of equipment rinse water.
- Emptied containers retain vapour and product residue.
- Refer to section 13 for disposal of rinse water.
- Observe all labelled safeguards until container is cleaned, reconditioned or destroyed.

Storage

- Minimum storage temperature: -15 °C
- Maximum storage temperature: 50 °C
- Compatible materials for storage: stainless steel, aluminium, fibreglass, plastic, glass lining
- Incompatible materials for storage: galvanised steel, unlined mild steel, see section 10.
- Keep out of reach of children.
- Keep away from food, drink and animal feed.
- Keep only in the original container.
- Partial crystallization may occur on prolonged storage below the minimum storage temperature.
- If frozen, place in warm room and shake frequently to put back into solution.
- Minimum shelf life: 5 years.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne exposure limits

Components	Exposure Guidelines
Isopropylamine salt of glyphosate	No specific occupational exposure limit has been established.
Other ingredients	No specific occupational exposure limit has been established.

Engineering controls

No special requirement when used as recommended.

Eye protection

If there is significant potential for contact:
Wear chemical goggles.

Skin protection

No special requirement when used as recommended.
If repeated or prolonged contact:
Wear chemical resistant gloves.

Respiratory protection

No special requirement when used as recommended.

When recommended, consult manufacturer of personal protective equipment for the appropriate type of equipment for a given application.

9. PHYSICAL AND CHEMICAL PROPERTIES

These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

Colour/colour range:	Amber
Form:	Liquid
Odour:	Sweet
Flash point:	None.
Specific gravity:	1.169 @ 20 °C / 15.6 °C
Solubility:	Water: Completely miscible.
pH:	4.4 - 5.0
Partition coefficient (log Pow):	< 0.00 (active ingredient)

10. STABILITY AND REACTIVITY

Stability

Stable under normal conditions of handling and storage.

Hazardous decomposition

Thermal decomposition: Hazardous products of combustion: see section 5.

Materials to avoid/Reactivity

Reacts with galvanised steel or unlined mild steel to produce hydrogen, a highly flammable gas that could explode.

11. TOXICOLOGICAL INFORMATION

This section is intended for use by toxicologists and other health professionals.

Data obtained on similar products and on components are summarized below.

Similar formulation

Acute oral toxicity

Rat, LD50: 5,108 mg/kg body weight
Practically non-toxic.
FIFRA category IV.

Acute dermal toxicity

Rat, LD50 (limit test): > 5,000 mg/kg body weight

Practically non-toxic.

FIFRA category IV.

No mortality.

Skin irritation

Rabbit, 6 animals, OECD 404 test:

Days to heal: 3

Primary Irritation Index (PII): 0.5/8.0

Essentially non irritating.

FIFRA category IV.

Eye irritation

Rabbit, 6 animals, OECD 405 test:

Days to heal: 3

Slight irritation.

FIFRA category III.

Acute inhalation toxicity

Rat, LC50, 4 hours, aerosol: 2.9 mg/L

Other effects: weight loss, breathing difficulty

Practically non-toxic.

FIFRA category IV.

Skin sensitization

Guinea pig, Buehler test:

Positive incidence: 0 %

N-(phosphonomethyl)glycine: {glyphosate}

Mutagenicity

In vitro and in vivo mutagenicity test(s):

Not mutagenic.

Repeated dose toxicity

Rabbit, dermal, 21 days:

NOAEL toxicity: > 5,000 mg/kg body weight/day

Target organs/systems: none

Other effects: none

Rat, oral, 3 months:

NOAEL toxicity: > 20,000 mg/kg diet

Target organs/systems: none

Other effects: none

Carcinogenicity

Mouse, oral, 24 months:

NOEL tumour: > 30,000 mg/kg diet

NOAEL toxicity: ~ 5,000 mg/kg diet

Tumours: none

Target organs/systems: liver

Other effects: decrease of body weight gain, histopathologic effects

Rat, oral, 24 months:

NOEL tumour: > 20,000 mg/kg diet

NOAEL toxicity: ~ 8,000 mg/kg diet

Tumours: none

Target organs/systems: eyes

Other effects: decrease of body weight gain, histopathologic effects

Toxicity to reproduction/fertility

Rat, oral, 3 generations:

NOAEL toxicity: > 30 mg/kg body weight

NOAEL reproduction: > 30 mg/kg body weight

Target organs/systems in parents: none

Other effects in parents: none
Target organs/systems in pups: none
Other effects in pups: none

Developmental toxicity/teratogenicity

Rat, oral, 6 - 19 days of gestation:

NOAEL toxicity: 1,000 mg/kg body weight
NOAEL development: 1,000 mg/kg body weight
Other effects in mother animal: decrease of body weight gain, decrease of survival
Developmental effects: weight loss, post-implantation loss, delayed ossification
Effects on offspring only observed with maternal toxicity.

Rabbit, oral, 6 - 27 days of gestation:

NOAEL toxicity: 175 mg/kg body weight
NOAEL development: 175 mg/kg body weight
Target organs/systems in mother animal: none
Other effects in mother animal: decrease of survival
Developmental effects: none

12. ECOLOGICAL INFORMATION

This section is intended for use by ecotoxicologists and other environmental specialists.

Data obtained on product and components are summarized below.

Aquatic toxicity, fish

Rainbow trout (*Oncorhynchus mykiss*):

Acute toxicity, 96 hours, static, LC50: 5.4 mg/L
Moderately toxic.

Bluegill sunfish (*Lepomis macrochirus*):

Acute toxicity, 96 hours, static, LC50: 7.3 mg/L
Moderately toxic.

Aquatic toxicity, invertebrates

Water flea (*Daphnia magna*):

Acute toxicity, 48 hours, static, EC50: 11 mg/L
Slightly toxic.

Avian toxicity

Mallard duck (*Anas platyrhynchos*):

Dietary toxicity, 5 days, LC50: > 5,620 mg/kg diet
Practically non-toxic.

Bobwhite quail (*Colinus virginianus*):

Dietary toxicity, 5 days, LC50: > 5,620 mg/kg diet
Practically non-toxic.

Arthropod toxicity

Honey bee (*Apis mellifera*):

Oral/contact, 48 hours, LD50: > 100 µg/bee
Practically non-toxic.

Soil organism toxicity, invertebrates

Earthworm (*Eisenia foetida*):

Acute toxicity, 14 days, LC50: > 1,250 mg/kg soil
Practically non-toxic.

N-(phosphonomethyl)glycine; {glyphosate}

Bioaccumulation

Bluegill sunfish (*Lepomis macrochirus*):

Whole fish: BCF: < 1
No significant bioaccumulation is expected.

Dissipation

Soil, field:

Half life: 2 - 174 days
Koc: 884 - 60,000 L/kg
Adsorbs strongly to soil.

Water, aerobic:

Half life: < 7 days

13. DISPOSAL CONSIDERATIONS

Product

Excess product may be disposed of by agricultural use according to label instructions.
Keep out of drains, sewers, ditches and water ways.
Recycle if appropriate facilities/equipment available.
Burn in proper incinerator.
Follow all local/regional/national/international regulations.

Container

See the individual container label for disposal information.
Emptied containers retain vapour and product residue.
Observe all labelled safeguards until container is cleaned, reconditioned or destroyed.
Empty packaging completely.
Triple or pressure rinse empty containers.
Do NOT contaminate water when disposing of rinse waters.
Ensure packaging cannot be reused.
Do NOT re-use containers.
Store for collection by approved waste disposal service.
Recycle if appropriate facilities/equipment available.
Follow all local/regional/national/international regulations.

14. TRANSPORT INFORMATION

The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.

Not hazardous under the applicable DOT, ICAO/IATA, IMO, TDG and Mexican regulations.

15. REGULATORY INFORMATION

TSCA Inventory

All components are on the US EPA's TSCA Inventory

OSHA Hazardous Components

Surfactant

SARA Title III Rules

Section 311/312 Hazard Categories
Immediate
Section 302 Extremely Hazardous Substances
Not applicable.
Section 313 Toxic Chemical(s)
Not applicable.

CERCLA Reportable quantity

Not applicable.

16. OTHER INFORMATION

The information given here is not necessarily exhaustive but is representative of relevant, reliable data.
Follow all local/regional/national/international regulations.
Please consult supplier if further information is needed.
In this document the British spelling was applied.

	Health	Flammability	Instability	Additional Markings
NFPA	2	1	1	

0 = Minimal hazard, 1 = Slight hazard, 2 = Moderate hazard, 3 = Severe hazard, 4 = Extreme hazard

Full denomination of most frequently used acronyms. BCF (Bioconcentration Factor), BOD (Biochemical Oxygen Demand), COD (Chemical Oxygen Demand), EC50 (50% effect concentration), ED50 (50% effect dose), I.M. (intramuscular), I.P. (intraperitoneal), I.V. (intravenous), Koc (Soil adsorption coefficient), LC50 (50% lethality concentration), LD50 (50% lethality dose), LDLo (Lower limit of lethal dosage), LEL (Lower Explosion Limit), LOAEC (Lowest Observed Adverse Effect Concentration), LOAEL (Lowest Observed Adverse Effect Level), LOEC (Lowest Observed Effect Concentration), LOEL (Lowest Observed Effect Level), MEL (Maximum Exposure limit), MTD (Maximum Tolerated Dose), NOAEC (No Observed Adverse Effect Concentration), NOAEL (No Observed Adverse Effect Level), NOEC (No Observed Effect Concentration), NOEL (No Observed Effect Level), OEL (Occupational Exposure Limit), PEL (Permissible Exposure Limit), PII (Primary Irritation Index), Pow (Partition coefficient n-octanol/water), S.C. (subcutaneous), STEL (Short-Term Exposure Limit), TLV-C (Threshold Limit Value-Ceiling), TLV-TWA (Threshold Limit Value - Time Weighted Average), UEL (Upper Explosion Limit)

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course. Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of federal law to use a pesticide product in any manner not prescribed on the EPA-approved label.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, MONSANTO Company makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for the purposes prior to use. In no event will MONSANTO Company be responsible for damages of any nature whatsoever resulting from the use of or reliance upon information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR TO THE PRODUCT TO WHICH INFORMATION REFERS.

00000012797



SAFETY DATA SHEET
Quali-Pro Bifenthrin I/T 7.9 F

Page 1 of 7
 Revision Date: October 20, 2015

SECTION 1: IDENTIFICATION

Product Name: Quali-Pro Bifenthrin I/T 7.9 F
EPA Registration No.: 53883-365
Recommended Use: Insecticide; See product label for a complete list of uses and use sites.
Restrictions on Use: See product label for any restrictions on the use of this product.
Chemical Family: Pyrethroid
Chemical Name of Active Ingredient(s): Bifenthrin: 2-Methyl-3-phenylphenyl)methyl (1S,3S)-[[Z]-2-chloro-3,3,3-trifluoroprop-1-enyl]-2,2-dimethylcyclopropane-1-carboxylate
Manufactured for: Control Solutions, Inc.
 5903 Genoa-Red Bluff
 Pasadena, TX 77507

FOR FIRE, SPILL, AND/OR LEAK EMERGENCIES CONTACT: CHEMTREC 1-800-424-9300
FOR MEDICAL EMERGENCIES AND HEALTH AND SAFETY INQUIRIES CONTACT: Safety Call 1-866-897-8050

SECTION 2: HAZARD(S) IDENTIFICATION

EMERGENCY OVERVIEW: Eggshell white liquid with a mild chemical odor.

OSHA HCS CLASSIFICATION (29 CFR 1910.1200)

Acute Inhalation Toxicity	Category 4
Skin Sensitization	Category 1B

Signal Word: WARNING



Hazard Statement(s): Harmful if inhaled.
 May cause an allergic skin reaction.

Precautionary Statement(s):

- Prevention:** Avoid breathing mist/ vapors/spray.
 Use only outdoors or in a well-ventilated area.
 Contaminated work clothing must not be allowed out of the workplace.
 Wear protective gloves.
- Response:** **IF INHALED:** Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.
IF ON SKIN: Wash with plenty of soap and water.
IF SKIN IRRITATION OR RASH OCCURS: Get medical advice/attention.
 Specific treatment (see first aid section of this document). Wash contaminated clothing before reuse.
- Storage:** No statement required. See section 7 for storage information.
- Disposal:** Dispose of contents/container in accordance with Federal, state and local laws and regulations.

The following percentage of the mixture consists of components with unknown hazards regarding the acute toxicity:

- 22.1% Acute oral toxicity
- 23.56% Acute dermal toxicity

Quali-Pro Bifenthrin I/T 7.9 F

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23.56% Acute Inhalation toxicity
22.1% Eye irritation
22.1% Skin irritation
22.1% Skin Sensitization

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Weight %
Bifenthrin	82657-04-3	7.9%

*Ingredients not listed or listed with a weight % range are considered a trade secret and are withheld under 29 CFR 1910.1200(i).

SECTION 4: FIRST AID MEASURES

IF IN EYES:	Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes; then continue rinsing eye. Call a poison control center or doctor for treatment advice.
IF ON SKIN:	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.
IF INHALED:	Move person to fresh air. If person is not breathing, call 911 or an ambulance; then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
IF INGESTED:	Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

Most important symptoms/effects, acute and delayed: Allergic skin reaction.

NOTE TO PHYSICIAN: This product is a pyrethroid. If large amounts have been ingested, the stomach and intestine should be evacuated. Treatment is symptomatic and supportive. Digestible fats, oils, or alcohol may increase absorption and so should be avoided.

SECTION 5: FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:	Foam, dry chemical, carbon dioxide or water spray
Unsuitable Extinguishing Media:	Water jet
Hazardous Combustion Products:	Thermal decomposition may produce toxic carbon and nitrogen oxides.
Special Protective Equipment & Precautions:	Evacuate area and fight fire upwind from a safe distance to avoid hazardous vapors and decomposition products. Foam and/or dry chemical are preferred to minimize environmental contamination. If water is used, dike and collect water to prevent run-off. Wear self-contained breathing apparatus and full fire-fighting turn-out gear (Bunker gear).
Unusual Fire & Explosion Hazards:	None known

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: See Section 8 for personal protection equipment.

Environmental Precautions: Keep spilled material and any rinsate from contaminating soil or from entering sewage and drainage systems and bodies of water.

Methods for Containment: Isolate the spill area. Keep unnecessary and unprotected personnel from entering. Absorb small spills with sand, vermiculite or other inert absorbent. Dike large spills using absorbent or impervious material such as clay or sand. Recover and contain as much free liquid as possible for reuse. Allow absorbed material to solidify and scrape up for disposal.

Methods for Clean-up: Place contaminated material in appropriate container for disposal. After removal, flush contaminated area thoroughly with water. Pick up wash liquid with additional absorbent and place in a disposable container. Do not put spilled material back in the original container.

Other Information: None known

SECTION 7: HANDLING AND STORAGE

Handling: RECOMMENDATIONS ARE INTENDED FOR MANUFACTURING, PACKAGING AND COMMERCIAL BLENDING WORKERS. PESTICIDE APPLICATORS AND WORKERS must refer to the product label and Directions for Use attached to the product for Agricultural Use Requirements in accordance with the EPA Worker Protection Standard 40 CFR part 170. Handle and open container in a manner as to prevent spillage. Do not eat, drink or smoke while handling this product. Immediately wash off accidental splashes of the concentrate or spray mixture from skin, clothing and out of eyes.

Storage: See pesticide label for full information on product storage. Do not contaminate water, food or feed by storage of this product. Store away from sources of heat, out of direct sunlight and away from incompatible materials. Pesticides should be stored in secured areas away from children and animals.

Storage Temperature (Min/Max): Not determined but avoid extreme temperatures.

Product Incompatibilities: Avoid contact with strong oxidizers.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Users of a pesticide product must refer to the product label for personal protective equipment requirements.

Exposure Guidelines:

COMPONENT	OSHA PEL	ACGIH TLV	NIOSH REL
No components listed			

Engineering Controls: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs or other specified exposure limits. Local exhaust ventilation is preferred.

Respiratory Protection: In areas of poor ventilation, use a NIOSH approved respirator with cartridges/canisters approved for pesticides.

Eye Protection: Chemical goggles or safety glasses and full-face shield.

Protective Gloves: Chemical-resistant gloves such as barrier laminate, butyl rubber, nitrile, neoprene rubber, polyvinyl chloride (PVC) or Viton.

Other Protective Clothing: Long-sleeved shirt, long pants and chemical resistant footwear plus socks.

General Safety Measures: Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing immediately after handling this product. Wash outside of gloves before removing. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Eggshell white liquid	Upper/Lower Flammability Limits:	Not determined
Odor:	Mild chemical odor	Vapor Pressure:	Not determined
Odor Threshold:	Not determined	Vapor Density:	Not determined
pH (1% dispersion):	5.8 – 6.2	Relative Density (@24°C):	1.038 (typical)
Melting /Freezing Point:	Not determined	Solubility in Water:	Dispersible
Boiling Point/Range:	Not determined	Partition Coefficient:	Not determined
Flash Point:	>212°F (>100°C)	Auto-ignition Temperature:	Not determined
Evaporation Rate:	Not determined	Decomposition Temperature:	Not determined
Flammability:	Not applicable	Viscosity:	Not determined

SECTION 10: STABILITY AND REACTIVITY

Reactivity: No hazardous chemical reactions known.

Chemical Stability: Stable under normal storage and handling conditions.

Possibility of Hazardous Reactions: No potential for hazardous reactions known.

Conditions to Avoid: Extreme temperatures

Incompatible Materials: Strong oxidizers

Hazardous Decomposition Products: Thermal decomposition may produce toxic carbon and nitrogen oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Eye contact, Skin contact, Inhalation, Ingestion

Symptoms of Exposure: No overt symptoms.

Oral LD₅₀: 4,489 mg/kg (Estimated based upon component data)

Dermal LD₅₀: 4,685 mg/kg (Estimated based upon component data)

Inhalation LC₅₀: 4.56 mg/L (Estimated based upon component data)

Eye Irritation/Damage: Not anticipated to be an eye irritant based upon component data.

Skin Corrosion/Irritation: Not anticipated to be a skin irritant based upon component data.

Skin Sensitization: Non-sensitizer, based upon component data.

Chronic/Subchronic Toxicity: No data available

Mutagenicity: No data available

Reproductive Toxicity: No data available

Neurotoxicity: No data available

Target Organs: Skin

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Aspiration Hazard: Not anticipated to be an aspiration hazard.
Carcinogenicity: The EPA considers bifenthrin to be a possible human carcinogen based upon animal studies.

Chemical Name	ACGIH	IARC	NTP	OSHA
No components listed				

SECTION 12: ECOLOGICAL INFORMATION

Environmental Hazards Statement from FIFRA Regulated Pesticide Label:

This pesticide is extremely toxic to fish and aquatic invertebrates. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwaters. Care should be used when spraying to avoid fish and reptile pets in/around ornamental ponds.

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow to drift to blooming crops if bees are visiting the treatment area.

ECOTOXICITY DATA: The data presented below is for bifenthrin technical.

Fish Toxicity: Rainbow trout: 96 hr LC₅₀ = 0.00015 ppm

Bluegill sunfish: 96 hr LC₅₀ = 0.00035 ppm

Aquatic Invertebrate Toxicity: No data available

Aquatic Plant Toxicity: No data available

Avian Toxicity: Bobwhite quail: Oral LD₅₀ = 1,800 mg/kg

Mallard duck: Oral LD₅₀ = 2,150 mg/kg

Honeybee Toxicity: Highly toxic

ENVIRONMENTAL EFFECTS:

Persistence and Degradability: No data available

Bioaccumulation: No data available

Mobility: No data available

Other Adverse Effects: No data available

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal: Refer to the pesticide label for full information on disposal. Pesticide wastes are toxic. Improper disposal of unused pesticide, spray mixture, or rinse water is a violation of Federal law. If these wastes cannot be used according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance in proper disposal methods.

Container Disposal: Refer to the pesticide label for full information on disposal. When possible, triple rinse the container and offer for recycling if available.

RCRA Characteristics: It is the responsibility of the individual disposing of this product to determine the RCRA classification and hazard status of the waste.

SECTION 14: TRANSPORTATION INFORMATION

DOT (Ground): Not regulated
IMDG (Sea): UN3082, Environmentally hazardous substance, liquid, n.o.s. (Bifenthrin), 9, PGIII
IATA (Air): UN3082, Environmentally hazardous substance, liquid, n.o.s. (Bifenthrin), 9, PGIII

SECTION 15: REGULATORY INFORMATION

Labeling Requirements Under FIFRA: This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

CAUTION

Harmful if swallowed, inhaled, or absorbed through skin. Avoid contact with skin, eyes or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove contaminated clothing and wash before reuse.

TSCA Inventory: This product is exempt from TSCA inventory listing requirements as it is solely for FIFRA regulated use.

SARA Title III Information:

Section 302 – Extremely hazardous substances: None
Section 311/312 – Hazard Categories: Acute (Immediate); Chronic (Delayed)
Section 313 – This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS Number	Weight %	SARA 313 – Threshold Values (lbs)
Bifenthrin	82657-04-3	7.9%	10,000

CERCLA – This product contains the following chemicals which have a reportable quantity (RQ) under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA):

Chemical Name	CAS Number	RQ	Quantity of Finished Product
None listed			

CALIFORNIA PROPOSITION 65:

Chemical Name	CAS Number	Prop 65 Category(ies)
None listed		

U.S. STATE RIGHT-TO-KNOW REGULATIONS:

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Bifenthrin	X		

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SECTION 16: OTHER INFORMATION

NFPA	Health Hazards 1	Flammability 1	Instability 0	Special Hazards – None
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Disclaimer: Control Solutions, Inc. believes the information presented herein is accurate and correct as of the document date. The presented information is based upon available data from reliable sources. Control Solutions, Inc. makes no warranty, express or implied, regarding the accuracy of the data or the results obtained from the use of this product. Nothing herein may be construed as recommending any practice or any product in violation of any law or regulations. The user is solely responsible for determining the suitability of any material or product for a specific purpose and for adopting any appropriate safety precautions. We disclaim all liability for injury or damage stemming from any improper use of the material or product described herein.

Revision Date: October 20, 2015

Document Superseded: April 6, 2015

Revision Note:

MONUMENT® 75WG HERBICIDE

1. PRODUCT IDENTIFICATION

Product identifier on label: **MONUMENT® 75WG HERBICIDE**

Product No.: A9842A

Use: Herbicide

Manufacturer: Syngenta Crop Protection, LLC
Post Office Box 18300
Greensboro NC 27419

Manufacturer Phone: 1-800-334-9481

Emergency Phone: 1-800-888-8372

2. HAZARDS IDENTIFICATION

Classifications: Specific Target Organ Toxicity: Repeated Category 2
Carcinogenicity: Category 1A

Signal Word (OSHA): Danger

Hazard Statements: May cause cancer
May cause damage to organs through prolonged or repeated exposure

Hazard Symbols:



Precautionary Statements: Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust.
Wear protective gloves, protective clothing, eye protection.
If exposed or concerned: Get medical advice/attention.
Store locked up.
Dispose of contents and container in accordance with local regulations.

Other Hazard Statements: May form combustible dust concentrations in air.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Common Name	CAS Number	Concentration
Crystalline Silica, Quartz and Cristobalite	Crystalline Silica, Quartz and Cristobalite	14808-60-7	Trade Secret
Diatomaceous Earth	Diatomaceous Earth	61790-53-2	Trade Secret

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Other ingredients	Other ingredients	Trade Secret	<25.0%
2-Pyridinesulfonamide, N-[[[4,6-dimethoxy-2-pyrimidinyl)amino]carbonyl]-3(2,2,2-trifluoroethoxy)-, monosodium salt, monohydrate	Trifloxysulfuron-Sodium	290332-10-4	75.0%

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

Have the product container, label or Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison control center or doctor, or going for treatment.

- Ingestion:** If swallowed: Call Syngenta (800-888-8372), a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so after calling 800-888-8372 or by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
- Eye Contact:** If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.
- Skin Contact:** If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.
- Inhalation:** If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call Syngenta (800-888-8372), a poison control center or doctor for further treatment advice.

Most important symptoms/effects:

Not Applicable

Indication of immediate medical attention and special treatment needed:

There is no specific antidote if this product is ingested.

Treat symptomatically.

5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media:

Use dry chemical, foam or CO2 extinguishing media. If water is used to fight fire, dike and collect runoff.

Specific Hazards:

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

Special protective equipment and precautions for firefighters:

Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures:

Follow exposure controls/personal protection outlined in Section 8.

Methods and materials for containment and cleaning up:

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions in Protective Equipment Section. Sweep up material and place in a compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into

compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

7. HANDLING AND STORAGE

Precautions for safe handling:

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

Conditions for safe storage, including any incompatibilities:

Store locked up.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION AND PACKAGING OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

Occupational Exposure Limits:

Chemical Name	OSHA PEL	ACGIH TLV	Other	Source
Crystalline Silica, Quartz and Cristobalite	10 mg/m ³ /(%SiO ₂ +2) (respirable dust)	0.025 mg/m ³ (respirable silica)	0.05 mg/m ³ (respirable dust)	NIOSH
Diatomaceous Earth	80 mg/m ³ /%SiO ₂ (20 mppcf) TWA	Not Established	6 mg/m ³ TWA	NIOSH
Other ingredients	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Trifloxysulfuron-Sodium	Not Established	Not Established	10 mg/m ³ TWA	Syngenta

Appropriate engineering controls:

Use effective engineering controls to comply with occupational exposure limits (if applicable).

Individual protection measures:

Ingestion:

Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

Eye Contact:

Where eye contact is likely, use dust-proof chemical goggles.

Skin Contact:

Where contact is likely, wear chemical-resistant gloves (such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride [PVC] or Viton), coveralls, socks and chemical-resistant footwear.

Inhalation:

A particulate filter respirator may be necessary until effective engineering controls are installed to comply with occupational exposure limits. Use NIOSH certified respirator with any N, R, P or HE filter. Use a self-contained breathing apparatus in cases of emergency spills, when exposure levels are unknown, or under any circumstances where air-purifying respirators may not provide adequate protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Light beige to brown granules
Odor: Not determined
Odor Threshold: Not Available
pH: 8 - 12 (1% w/w dilution in deionized water)
Melting point/freezing point: Not Available
Initial boiling point and boiling range: Not Applicable
Flash Point (Test Method): Not Applicable
Flammable Limits (% in Air): Not Available
Flammability: Not Applicable
Vapor Pressure: Trifloxysulfuron-Sodium 7.5 x 10⁻⁸ mmHg @ 77°F (25°C)
Vapor Density: Not Available
Relative Density: 0.60 - 0.80 g/cm³
Solubility (ies): Trifloxysulfuron-Sodium 102.5 mg/l @ 77°F (25°C) (pH 5.4)
Partition coefficient: n-octanol/water: Not Available
Autoignition Temperature: Not Available
Decomposition Temperature: Not Available
Viscosity: Not Available
Other: None

10. STABILITY AND REACTIVITY

Reactivity: Not reactive.
Chemical stability: Stable under normal use and storage conditions.
Possibility of hazardous reactions: Will not occur.
Conditions to Avoid: None known.
Incompatible materials: None known.
Hazardous Decomposition Products: None known.

11. TOXICOLOGICAL INFORMATION

Health effects information

Likely routes of exposure: Dermal, Inhalation

Symptoms of exposure: Not Applicable

Delayed, immediate and chronic effects of exposure: Possible carcinogenicity, Not Applicable

Numerical measures of toxicity (acute toxicity/irritation studies (finished product))

Ingestion: Oral (LD50 Rat) : > 5000 mg/kg body weight

Dermal:	Dermal (LD50 Rat) :	> 2000 mg/kg body weight
Inhalation:	Inhalation (LC50 Rat) :	> 2.55 mg/l air - 4 hours
Eye Contact:	Minimally Irritating (Rabbit)	
Skin Contact:	Slightly Irritating (Rabbit)	
Skin Sensitization:	Not a Sensitizer (Guinea Pig)	

Reproductive/Developmental Effects

Trifloxysulfuron-Sodium : Mutagenic Potential in Vitro: Negative cytogenetic test CHO cells. Negative Ames test.
 Mutagenic Potential in Vivo: Negative mouse micronucleus test.

Chronic/Subchronic Toxicity Studies

Trifloxysulfuron-Sodium : Not Available

Carcinogenicity

Trifloxysulfuron-Sodium : Not Available

Chemical Name	NTP/IARC/OSHA Carcinogen
Crystalline Silica, Quartz and Cristobalite	IARC 1; ACGIH A2
Diatomaceous Earth	IARC 3
Other ingredients	No
2-Pyridinesulfonamide, N-[[[4,6-dimethoxy-2-pyrimidinyl)amino]carbonyl]-3(2,2,2-trifluoroethoxy)-, monosodium salt, monohydrate	No

Other Toxicity Information

None

Toxicity of Other Components

Crystalline Silica, Quartz and Cristobalite

Chronic inhalation exposure to crystalline silica is known to cause silicosis and pulmonary fibrosis in humans. Experimental animals exposed to crystalline silica developed respiratory tract cancers.

Diatomaceous Earth

The carrier in this product is naturally occurring diatomaceous earth. Natural diatomaceous earth contains a small percentage of naturally occurring crystalline silica, which is considered a human carcinogen. Chronic inhalation exposure to crystalline silica is known to cause silicosis and pulmonary fibrosis in humans. The amount of crystalline silica in this product is minimal and the potential for overexposure in manufacturing operations is low.

Other ingredients

Not Applicable

Target Organs

Active Ingredients

Trifloxysulfuron-Sodium : Not Applicable

Inert Ingredients

Crystalline Silica, Quartz and Cristobalite: Respiratory tract

Diatomaceous Earth: Respiratory tract

Other ingredients: Not Applicable

12. ECOLOGICAL INFORMATION

Eco-Acute Toxicity

Trifloxysulfuron-Sodium :

Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 > 108 ppm

Green Algae 72-hour EC50 23 ppm

Bird (Bobwhite Quail) 14-day LD50 > 2250 mg/kg

Environmental Fate

Trifloxysulfuron-Sodium :

The information presented here is for the active ingredient, trifloxysulfuron-sodium.

Not persistent in soil or water. Highly mobile in soil. Will leach. Sinks in water (after 24 h).

13. DISPOSAL CONSIDERATIONS

Disposal:

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

Characteristic Waste: Not Applicable

Listed Waste: Not Applicable

14. TRANSPORT INFORMATION

DOT Classification

Ground Transport - NAFTA

Not regulated

Comments

Water Transport - International

Proper Shipping Name: Environmentally Hazardous Substance, Solid, N.O.S. (Trifloxysulfuron-Sodium), Marine Pollutant

Hazard Class: Class 9

Identification Number: UN 3077

Packing Group: PG III

Air Transport

Proper Shipping Name: Environmentally Hazardous Substance, Solid, N.O.S. (Trifloxysulfuron-Sodium)

Hazard Class: Class 9

Identification Number: UN 3077

Packing Group: PG III

15. REGULATORY INFORMATION**Pesticide Registration:**

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Caution: Harmful if absorbed through skin. Avoid contact with eyes, skin, or clothing.

EPA Registration Number(s):

100-1134

EPCRA SARA Title III Classification:

Section 311/312 Hazard Classes: Acute Health Hazard

Section 313 Toxic Chemicals: None

California Proposition 65:

This product contains trace amounts of chemical(s) known to the State of California to cause cancer as unintended impurities resulting from other entities manufacturing or processing operations which Syngenta cannot control.

CERCLA/SARA 304 Reportable Quantity (RQ):

None

RCRA Hazardous Waste Classification (40 CFR 261):

Not Applicable

TSCA Status:

Exempt from TSCA, subject to FIFRA

16. OTHER INFORMATION**NFPA Hazard Ratings**

Health: 1
Flammability: 1
Instability: 0

HMS Hazard Ratings

Health: 2
Flammability: 1
Reactivity: 0

0	Minimal
1	Slight
2	Moderate
3	Serious
4	Extreme
*	Chronic

Syngenta Hazard Category: D

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 3/10/2003

Revision Date: 7/31/2015

Replaces: 4/9/2015

Section(s) Revised: 2, 4, 11, 16

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.

Issue Date 23-May-2018

Revision Date 15-Jun-2018

Version 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name SpeedZone® Southern EW Broadleaf Herbicide for Turf

Other means of identification

Product Code PBI FP 8741006
EPA Pesticide Registration Number 2217-1031
Product Size Bulk gal

Recommended use of the chemical and restrictions on use

Recommended Use Herbicide.
Uses advised against No information available.

Details of the supplier of the safety data sheet

Supplier	Manufacturer	Company Name
PBI Gordon Corporation 1217 West 12th Street Kansas City, MO 64101	PBI Gordon Corporation 1217 West 12th Street Kansas City, MO 64101	PBI Gordon Corporation 1217 West 12th Street Kansas City, MO 64101

Emergency telephone number

Emergency Telephone Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)


Acute Oral Toxicity	Category 4
Acute Inhalation Toxicity - Dusts and Mists	Category 4
Skin Sensitization	Category 1
Carcinogenicity	Category 1A
Chronic Aquatic Toxicity	Category 2
Flammable liquids	Category 3

Label elements

Emergency Overview

Danger

Hazard statements
 May cause an allergic skin reaction. May cause cancer. Toxic to aquatic life with long lasting effects. Harmful if swallowed. Harmful if inhaled.
 Flammable liquid and vapor.



Appearance Liquid **Physical State @20°C** Liquid **Odor** Peppermint

Precautionary Statements - Prevention

- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood
- Use personal protective equipment as required
- Wash face, hands and any exposed skin thoroughly after handling
- Do not eat, drink or smoke when using this product
- Avoid breathing dust/fume/gas/mist/vapors/spray
- Use only outdoors or in a well-ventilated area
- Contaminated work clothing should not be allowed out of the workplace
- Wear protective gloves
- Avoid release to the environment
- Keep away from heat/sparks/open flames/hot surfaces. — No smoking
- Keep container tightly closed

Precautionary Statements - Response

- IF exposed or concerned: Get medical advice/attention
- IF skin irritation or rash occurs: Get medical advice/attention
- Wash contaminated clothing before reuse
- IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
- Rinse mouth
- In case of fire: Use CO₂, dry chemical, or foam for extinction
- Collect spillage

Precautionary Statements - Storage

- Store locked up
- Store in a well-ventilated place. Keep cool

Precautionary Statements - Disposal

- Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

The low flash point of this product is due to a minor component in the mixture. Based on independent laboratory testing of similar products, this product would not sustain combustion as specified in DOT Regulation 49 CFR 173 Appendix H; however OSHA HCS 2012 flammable classifications are solely based on tested mixture flash points and boiling points.

Have the product label with you when calling a poison control center or doctor or going in for treatment. You may also contact 1-877-800-5556 for emergency medical treatment advice.

Other Information

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS. Number	Weight %
2,4-D, 2-ethylhexyl ester	1928-43-4	9.02
R(+)-2,4-DP 2EHE	865363-39-9	5.19
3,6-Dichloro-o-anisic acid (Dicamba)	1918-00-9	0.59
Carfentrazone-ethyl	128639-02-1	0.47
Trade Secret	Proprietary	0 - 10%

* The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures

General advice

Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing.

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). If symptoms persist, call a physician.

Eye contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.
Skin Contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If skin irritation persists, call a physician.
Inhalation	Move to fresh air in case of accidental inhalation of vapors or decomposition products. If breathing is irregular or stopped, administer artificial respiration. If symptoms persist, call a physician.
Ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician immediately.
Self-protection of the first aider	Use personal protective equipment as required.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians May cause sensitization of susceptible persons. Treat symptomatically. Probable mucosal damage may contradict the use of gastric lavage.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Dry chemical. Foam. Water. Carbon dioxide (CO₂).

Specific hazards arising from the chemical

In the event of fire and/or explosion do not breathe fumes. May cause sensitization by inhalation and skin contact. Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Evacuate personnel to safe areas. Ensure adequate ventilation, especially in confined areas. Keep people away from and upwind of spill/leak.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Use personal protective equipment as required. Dam up. Cover liquid spill with sand, earth or other non-combustible absorbent material. Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Ensure adequate ventilation, especially in confined areas. Take precautionary measures against static discharges. Use with local exhaust ventilation. Use personal protective equipment as required. Do not breathe dust/fume/gas/mist/vapors/spray.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep out of the reach of children. Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers. Keep from freezing.

Incompatible materials None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
2,4-D, 2-ethylhexyl ester 1928-43-4	TWA: 10 mg/m ³ inhalable fraction S*	TWA: 10 mg/m ³	IDLH: 100 mg/m ³ , TWA: 10 mg/m ³
Trade Secret	TWA: 0.025 mg/m ³ respirable fraction	(vacated) TWA: 0.1 mg/m ³ respirable dust : (30)/(%SiO ₂ + 2) mg/m ³ TWA total dust : (250)/(%SiO ₂ + 5) mppcf TWA respirable fraction : (10)/(%SiO ₂ + 2) mg/m ³ TWA respirable fraction	IDLH: 50 mg/m ³ respirable dust TWA: 0.05 mg/m ³ respirable dust

NIOSH IDLH Immediately Dangerous to Life or Health

Other Information Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering Controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles. Face protection shield.

Skin and body protection Chemical resistant gloves. Wear long-sleeved shirt, long pants, socks and shoes.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State @20°C	Liquid	Odor	Peppermint
Appearance	Liquid	Odor threshold	No information available
Color	Milky white		
Property	Values	Remarks • Method	
pH	6.0 - 7.5		
Melting point/freezing point	No information available		
Boiling point / boiling range	> 93 °C / 200 °F		
Flash point	> 44 °C / > 112 °F		Pensky-Martens Closed Cup (PMCC)
Evaporation rate	No information available		
Flammability (solid, gas)	No information available		
Flammability Limit in Air			
Upper flammability limit:	No information available		
Lower flammability limit:	No information available		
Vapor pressure	No information available		
Vapor density	No information available		
Specific Gravity	1.019		
Water solubility	Emulsifiable		
Solubility in other solvents	No information available		
Partition coefficient	No information available		
Autoignition temperature	No information available		
Decomposition temperature	No information available		
Oxidizing properties	No information available		
Other Information			
Density VALUE	8.1 - 8.5 pounds/gallon		

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Keep out of reach of children. Keep from freezing.

Incompatible materials

None known based on information supplied.

Hazardous Decomposition Products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation Moderate respiratory irritant.

Eye contact Practically non-irritating.

Skin Contact May cause sensitization of susceptible persons.

Ingestion See "Numerical measures of toxicity-product information" in this section.

Chemical Name	LD50 Oral VALUE (mg/kg)	LD50 Dermal VALUE	LC50 Inhalation (DUST) VALUE
2,4-D, 2-ethylhexyl ester 1928-43-4	= 300 mg/kg (Rat)	-	-
3,6-Dichloro-o-anisic acid (Dicamba) 1918-00-9	= 1039 mg/kg (Rat)	> 1 g/kg (Rat) > 2 g/kg (Rabbit)	-
Trade Secret	= 500 mg/kg (Rat)	-	-

Information on toxicological effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization May cause sensitization of susceptible persons.

Germ cell mutagenicity No information available.

Carcinogenicity The International Agency for Research on Cancer (IARC) lists chlorophenoxy herbicides in its Group 2B (limited evidence for Carcinogenicity in humans.) The US EPA has given the chlorophenoxy Herbicides 2,4-D, 2,4-DP, MCPP, and MCPA a Class D classification (not classifiable as to human carcinogenicity.) More current 2,4-D lifetime feeding studies in rats and mice did not show carcinogenic effects and a recent World Health Organization (WHO) review of 2,4-D toxicology has concluded that 2,4-D is not a carcinogen. The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
2,4-D, 2-ethylhexyl ester 1928-43-4		Group 2B		X
Trade Secret	A2	Group 1	Known	X

ACGIH (American Conference of Governmental Industrial Hygienists)
A2 - Suspected Human Carcinogen
IARC (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
Group 2B - Possibly Carcinogenic to Humans
NTP (National Toxicology Program)
Known - Known Carcinogen
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Chronic toxicity Repeated contact may cause allergic reactions in very susceptible persons. Avoid repeated exposure.

Aspiration hazard No information available.

Numerical measures of toxicity - Product Information

Unknown Toxicity 7 % of the mixture consists of ingredient(s) of unknown toxicity

LD50 Oral VALUE (mg/kg) 1750 mg/kg (female rats)

LD50 Dermal VALUE > 5000 mg/kg (female rats) (male rats)

LC50 Inhalation (DUST) VALUE > 2.07 mg/L (female rats) (male rats)

The following values are calculated based on chapter 3.1 of the GHS document mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic life

8% of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
2,4-D, 2-ethylhexyl ester 1928-43-4	30: 120 h Pseudokirchneriella subcapitata mg/L EC50 30: 120 h Pseudokirchneriella subcapitata mg/L EC50 static	6 - 8.7: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 7.8: 96 h Oncorhynchus mykiss mg/L LC50 static 11.5: 96 h Lepomis macrochirus mg/L LC50 static		

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes

This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

Contaminated packaging

Do not reuse container, unless specified by the manufacturer.

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name

For package sizes less than 130 gallons: product is non-regulated.

Description

For package sizes 130 gallons or greater: UN3082, Environmentally Hazardous Substances, Liquid, N.O.S., 9, PGIII, RQ (2,4-D)
The following guidelines apply for domestic ground transport. If shipping by air or ocean, please contact our Transportation Dept.

PESTICIDES, NOI, INCLUDING DEFOLIANTS, FUNGICIDES, HERBICIDES, OR
INSECTICIDES NMFC 155050-6

15. REGULATORY INFORMATION

U.S. EPA Label Information

EPA Pesticide Registration Number 2217-1031

Federal Insecticide, Fungicide, Rodenticide Act Regulations

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

EPA Pesticide Label

KEEP OUT OF REACH OF CHILDREN

CAUTION

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION: Harmful if swallowed. Avoid contact with skin or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

Environmental Hazards:

This pesticide is toxic to fish and aquatic invertebrates and may adversely affect nontarget plants. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous

to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment wash waters or rinsate.

Groundwater Advisory:

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

Application around a cistern or well may result in contamination of drinking water or groundwater.

International Inventories

TSCA	Not Listed
DSL/NDSL	Not Listed
EINECS/ELINCS	Not Listed
ENCS	Not Listed
IECSC	Not Listed
KECL	Not Listed
PICCS	Not Listed
AICS	Not Listed

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
2,4-D, 2-ethylhexyl ester				X						
3,6-Dichloro-o-anisic acid (Dicamba)				X		X		X	X	X
Carfentrazone-ethyl							X			
Trade Secret	X	X		X		X	X	X	X	X

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	SARA 313 - Threshold Values %
2,4-D, 2-ethylhexyl ester - 1928-43-4	0.1
3,6-Dichloro-o-anisic acid (Dicamba) - 1918-00-9	1.0

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	Yes
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
2,4-D, 2-ethylhexyl ester 1928-43-4	100 lb			
3,6-Dichloro-o-anisic acid (Dicamba) 1918-00-9	1000 lb			X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
2,4-D, 2-ethylhexyl ester 1928-43-4	100 lb		RQ 100 lb final RQ RQ 45.4 kg final RQ
3,6-Dichloro-o-anisic acid (Dicamba) 1918-00-9	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ

US State Regulations

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
2,4-D, 2-ethylhexyl ester 1928-43-4	X		
3,6-Dichloro-o-anisic acid (Dicamba) 1918-00-9	X	X	X
Trade Secret	X	X	X

International Regulations

Mexico - Grade

Moderate risk, Grade 2

Chemical Name	Carcinogenicity	Exposure Limits
Trade Secret		Mexico: TWA 0.1 mg/m ³

16. OTHER INFORMATION

NFPA	Health hazards 2	Flammability 1	Instability 0	Physical and Chemical Properties -
HMIS	Health hazards 2	Flammability 1	Physical hazards 0	Personal protection X

Disclaimer

The information provided in this Material Safety Data Sheet is correct to the best of PBI Gordon Corporation's knowledge, information and belief at the date of this publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process, unless specified in the text. PBI GORDON CORPORATION MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. Given the variety of factors that can affect the use and application of this product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the product to determine whether it is fit for a particular purpose and suitable for user's method of use or application. Each user is also responsible for evaluating the conditions of use and designing the appropriate protective mechanisms to prevent employee exposures, property damage, or release to the environment. PBI Gordon Corporation assumes no responsibility for injury to the

SAFETY DATA SHEET



TRIBUTE® TOTAL

Version 4.0 / USA
102000025052

1/13
Revision Date: 05/20/2020
Print Date: 05/22/2020

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Trade name TRIBUTE® TOTAL
Product code (UVP) 80192401
SDS Number 102000025052
EPA Registration No. 432-1519

Relevant identified uses of the substance or mixture and uses advised against

Use Herbicide
Restrictions on use See product label for restrictions.

Information on supplier

Supplier Bayer Environmental Science
A division of Bayer CropScience LP
500 Centregreen Way, Suite 400
Cary, NC 27513
USA
Responsible Department Email: SDSINFO.BCS-NA@bayer.com
Emergency telephone no.
Emergency Telephone Number (24hr/ 7 days) 1-800-334-7577
Product Information Telephone Number 1-800-331-2867

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200
Reproductive toxicity: Category 1B

Labelling in accordance with regulation HCS 29CFR §1910.1200



Signal word: Danger

Hazard statements
May damage fertility or the unborn child.

Precautionary statements

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/ protective clothing/ eye protection/ face protection.
IF exposed or concerned: Get medical advice/ attention.
Store locked up.
Dispose of contents/container in accordance with local regulation.

Hazards Not Otherwise Classified (HNOC)

No physical hazards not otherwise classified.
No health hazards not otherwise classified.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Concentration % by weight
Halosulfuron-Methyl	100784-20-1	30.8
Foramsulfuron	173159-57-4	19.8
Thiocarbazone-methyl	317815-83-1	9.9
Sulfonated aromatic polymer, sodium salt	68425-94-5	9.0
Aromatic hydrocarbons, C10-13, reaction products with branched nonene, sulfonated, sodium salts	1258274-08-6	3.6
Disodium maleate	371-47-1	0.18
Crystalline quartz (respirable)	14808-60-7	0.18

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General advice	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
Inhalation	Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.
Skin contact	Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.
Eye contact	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

Most important symptoms and effects, both acute and delayed

Symptoms	To date no symptoms are known.
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Indication of any immediate medical attention and special treatment needed

Treatment Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

SECTION 5: FIREFIGHTING MEASURES**Extinguishing media**

Suitable Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable High volume water jet

Special hazards arising from the substance or mixture In the event of fire the following may be released: Hydrogen chloride (HCl), Hydrogen cyanide (hydrocyanic acid), Carbon monoxide (CO), Carbon dioxide (CO₂), Nitrogen oxides (NO_x), Sulphur oxides

Advice for firefighters

Special protective equipment for firefighters Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

Further information Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.

Flash point Not applicable

Auto-ignition temperature 187 °C / 368.6 °F

Lower explosion limit Not applicable

Upper explosion limit Not applicable

Explosivity No data available

SECTION 6: ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

Precautions Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

Methods and materials for containment and cleaning up

Methods for cleaning up Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations.

Additional advice Use personal protective equipment. If the product is accidentally spilled, do not allow to enter soil, waterways or waste water canal. Do not allow product to contact non-target plants.

Reference to other sections Information regarding safe handling, see section 7.
 Information regarding personal protective equipment, see section 8.
 Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Use only in area provided with appropriate exhaust ventilation. Avoid dust formation.

Advice on protection against fire and explosion Dust may form explosive mixture in air. Take measures to prevent the build up of electrostatic charge. Keep away from heat and sources of ignition.

Hygiene measures Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.
 Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area. Protect from frost. Keep away from direct sunlight.

Advice on common storage Keep away from food, drink and animal feedingstuffs.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Thiencarbazone-methyl	317815-83-1	10 mg/m3 (TWA)		OES BCS*
Foramsulfuron	173159-57-4	10 mg/m3 (TWA)		OES BCS*
Crystalline quartz (respirable) (Respirable fraction.)	14808-60-7	0.025 mg/m3 (TWA)	02 2012	ACGIH
Crystalline quartz (respirable) (Respirable dust.)	14808-60-7	0.05 mg/m3 (REL)	2016	NIOSH

Crystalline quartz (respirable)	14808-60-7	0.05 mg/m3 (TWA)	03 2016	OSHA
Crystalline quartz (respirable)	14808-60-7	0.025 mg/m3 (OSHA_ACT)	03 2016	OSHA
Crystalline quartz (respirable) (Respirable dust.)	14808-60-7	0.05 mg/m3 (PEL)	03 2016	OSHA Z1
Crystalline quartz (respirable) (Respirable dust.)	14808-60-7	0.050 mg/m3 (TWA)	01 2019	TN OEL
Crystalline quartz (respirable) (Respirable dust.)	14808-60-7	0.05 mg/m3 (TWA PEL)	10 2016	US CA OEL
Crystalline quartz (respirable) (Respirable.)	14808-60-7	2.4millions of particles per cubic foot of air (TWA)	2000	Z3
Crystalline quartz (respirable) (Respirable.)	14808-60-7	0.1 mg/m3 (TWA)	2000	Z3

*OES BCS: Internal Bayer AG, Crop Science Division "Occupational Exposure Standard"

Exposure controls

Personal protective equipment

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

Respiratory protection

When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

Hand protection

Chemical resistant nitrile rubber gloves

Eye protection

Tightly fitting safety goggles

Skin and body protection

Wear long-sleeved shirt and long pants and shoes plus socks.

General protective measures

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water.
Keep and wash PPE separately from other laundry.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	beige
Physical State	water-dispersible granules
Odor	characteristic
Odour Threshold	No data available
pH	4.5 - 5.5 (10 %) (23 °C) (deionized water)
Viscosity, kinematic	No data available
Vapor Pressure	No data available
Vapor Density (Air = 1)	No data available
Density	No data available
Bulk density	0.559 - 0.656 g/ml (loose)
Evaporation rate	Not applicable
Boiling Point	Not applicable
Melting / Freezing Point	Not applicable
Water solubility	dispersible
Minimum Ignition Energy	No data available
Decomposition temperature	150 °C , Heating rate: 3 K/min , Decomposition energy: 320 kJ/kg 105 °C , Heating rate: 0.05 K/min
Self-accelerating decomposition temperature (SADT)	No data available
Partition coefficient: n-octanol/water	No data available
Flammability	No data available
Flash point	Not applicable
Auto-ignition temperature	187 °C / 368.6 °F
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Explosivity	No data available
Particle size	No data available
Other information	The product is capable of dust explosions.

SECTION 10: STABILITY AND REACTIVITY

Reactivity

Thermal decomposition	150 °C, Heating rate: 3 K/min, Decomposition energy: 320 kJ/kg 105 °C, Heating rate: 0.05 K/min
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	No hazardous reactions when stored and handled according to prescribed instructions.
Conditions to avoid	Extremes of temperature and direct sunlight.
Incompatible materials	No incompatible materials known.
Hazardous decomposition products	No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes Ingestion, Eye contact, Skin contact

Immediate Effects

Eye	May cause eye irritation.
Skin	May cause skin irritation.
Ingestion	Harmful if swallowed.

Information on toxicological effects

Acute oral toxicity LD50 (Rat) 3,129 mg/kg

Acute inhalation toxicity LC50 (Rat) > 2.02 mg/l
Exposure time: 4 h
Determined in the form of a respirable aerosol.
LC50 (Rat) > 8.08 mg/l
Exposure time: 1 h
Determined in the form of a respirable aerosol.
Extrapolated from the 4 hr LC50.

Acute dermal toxicity LD50 (Rat) > 5,000 mg/kg

Skin corrosion/irritation Slight irritant effect - does not require labelling. (Rabbit)

Serious eye damage/eye irritation Slight irritant effect - does not require labelling. (Rabbit)

Respiratory or skin sensitisation Skin: Non-sensitizing. (Guinea pig)

Assessment STOT Specific target organ toxicity – single exposure

Thiocarbazone-methyl: Based on available data, the classification criteria are not met.

Foramsulfuron: Based on available data, the classification criteria are not met.

Assessment STOT Specific target organ toxicity – repeated exposure

Halosulfuron-methyl did not cause specific target organ toxicity in experimental animal studies.
Thiencarbazone-methyl did not cause specific target organ toxicity in experimental animal studies.
Foramsulfuron did not cause specific target organ toxicity in experimental animal studies.

Assessment mutagenicity

Halosulfuron-methyl was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.
Thiencarbazone-methyl was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.
Foramsulfuron was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

Assessment carcinogenicity

Halosulfuron-methyl was not carcinogenic in lifetime feeding studies in rats and mice.
Thiencarbazone-methyl was not carcinogenic in a lifetime feeding study in rats. Thiencarbazone-methyl caused at high dose levels an increased incidence of tumours in mice in the following organ(s): urinary bladder. The tumours seen with Thiencarbazone-methyl were caused through the chronic irritation due to the presence of bladder stones.
Foramsulfuron was not carcinogenic in lifetime feeding studies in rats and mice.

ACGIH

Crystalline quartz (respirable)	14808-60-7	Group A2
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NTP

Crystalline quartz (respirable)	14808-60-7
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IARC

Crystalline quartz (respirable)	14808-60-7	Overall evaluation: 1
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OSHA

None.

Assessment toxicity to reproduction

Halosulfuron-methyl did not cause reproductive toxicity in a two-generation study in rats.
Thiencarbazone-methyl did not cause reproductive toxicity in a two-generation study in rats.
Foramsulfuron did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity

Halosulfuron-methyl caused developmental toxicity only at dose levels toxic to the dams. Halosulfuron-methyl caused an increased incidence of non-specific malformations.
Thiencarbazone-methyl did not cause developmental toxicity in rats and rabbits.
Foramsulfuron did not cause developmental toxicity in rats and rabbits.

Further information

Only acute toxicity studies have been performed on the formulated product.
The non-acute information pertains to the active ingredient(s).

Toxicity to fish	LC50 (Oncorhynchus mykiss (rainbow trout)) > 100 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient foramsulfuron.
	LC50 (Oncorhynchus mykiss (rainbow trout)) > 104 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient thien carbazole-methyl.
	LC50 (Oncorhynchus mykiss (rainbow trout)) > 131 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient halosulfuron-methyl.
Toxicity to aquatic invertebrates	LC50 (Daphnia (water flea)) > 100 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient foramsulfuron.
	EC50 (Daphnia magna (Water flea)) > 98.6 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient thien carbazole-methyl.
	EC50 (Daphnia magna (Water flea)) > 107 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient halosulfuron-methyl.
Toxicity to aquatic plants	EC50 (Raphidocelis subcapitata (freshwater green alga)) 75 mg/l Exposure time: 72 h The value mentioned relates to the active ingredient foramsulfuron.
	IC50 (Raphidocelis subcapitata (freshwater green alga)) 1.017 mg/l Growth rate; Exposure time: 72 h The value mentioned relates to the active ingredient thien carbazole-methyl.
	IC50 (Lemna gibba (gibbous duckweed)) 0.00131 mg/l Growth rate; Exposure time: 7 d The value mentioned relates to the active ingredient thien carbazole-methyl.
	EC50 (Lemna gibba (gibbous duckweed)) 0.000217 mg/l Growth rate; Exposure time: 7 d The value mentioned relates to the active ingredient halosulfuron-methyl.
Biodegradability	Halosulfuron-methyl: Not rapidly biodegradable Thien carbazole-methyl: Not rapidly biodegradable Foramsulfuron:

	Not rapidly biodegradable
Koc	Halosulfuron-methyl: Koc: 113 Thiencarbazono-methyl: Koc: 100 Foramsulfuron: Koc: 38 - 151
Bioaccumulation	Halosulfuron-methyl: Does not bioaccumulate. Thiencarbazono-methyl: Does not bioaccumulate. Foramsulfuron: Does not bioaccumulate.
Mobility in soil	Halosulfuron-methyl: Moderately mobile in soils Thiencarbazono-methyl: Moderately mobile in soils Foramsulfuron: Mobile in soils
Additional ecological information	No other effects to be mentioned.
Environmental precautions	Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Do not apply when weather conditions favor runoff or drift. Drift or runoff from treated areas may adversely affect non-target plants. Apply this product as specified on the label.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product	Dispose in accordance with all local, state/provincial and federal regulations. Never place unused product down any indoor or outdoor drain.
Contaminated packaging	Do not re-use empty containers. Triple rinse containers. Completely empty container into application equipment, then dispose of empty container in a sanitary landfill, by incineration or by other procedures approved by state/provincial and local authorities. If burned, stay out of smoke. Follow advice on product label and/or leaflet.
RCRA Information	Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.

SECTION 14: TRANSPORT INFORMATION

49CFR	Not dangerous goods / not hazardous material
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IMDG

UN number	3077
Class	9
Packaging group	III
Marine pollutant	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (THIENCARBAZONE-METHYL, HALOSULFURON-METHYL MIXTURE)

IATA

UN number	3077
Class	9
Packaging group	III
Environm. Hazardous Mark	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (THIENCARBAZONE-METHYL, HALOSULFURON-METHYL MIXTURE)

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

SECTION 15: REGULATORY INFORMATION

EPA Registration No. 432-1519

US Federal Regulations**TSCA list**

Kaolin	1332-58-7
Sulfonated aromatic polymer, sodium salt	68425-94-5
Polyvinylpyrrolidone	9003-39-8

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

No export notification needs to be made.

SARA Title III - Section 302 - Notification and Information

Not applicable.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

None.

US States Regulatory Reporting**CA Prop65**

WARNING: This product contains a chemical known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Crystalline quartz (respirable)	14808-60-7
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This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients

Kaolin	1332-58-7	MN, RI
Polyvinylpyrrolidone	9003-39-8	CA

None.

EPA/FIFRA Information:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information required on the pesticide label:

Signal word: Caution!

Hazard statements: Harmful if swallowed.
Causes moderate eye irritation.

SECTION 16: OTHER INFORMATION**Abbreviations and acronyms**

49CFR	Code of Federal Regulations, Title 49
ACGIH	US. ACGIH Threshold Limit Values
ATE	Acute toxicity estimate
CAS-Nr.	Chemical Abstracts Service number
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
EINECS	European inventory of existing commercial substances
ELINCS	European list of notified chemical substances
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
N.O.S.	Not otherwise specified
NTP	US. National Toxicology Program (NTP) Report on Carcinogens
OECD	Organization for Economic Co-operation and Development
TDG	Transportation of Dangerous Goods
TWA	Time weighted average
UN	United Nations
WHO	World health organisation

NFPA 704 (National Fire Protection Association):

Health - 2 Flammability - 1 Instability - 1 Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 1 Flammability - 1 Physical Hazard - 1 PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: The following sections have been revised: Section 11: Toxicological Information. Reviewed and updated for general editorial purposes.

Revision Date: 05/20/2020

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.

SAFETY DATA SHEET



PROXY® GROWTH REGULATOR

Version 4.0 / USA
102000004255

1/11
Revision Date: 05/28/2021
Print Date: 05/29/2021

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Identifier

Trade name PROXY® GROWTH REGULATOR
Product code (UVP) 05927285
SDS Number 102000004255
EPA Registration No. 432-1230

Relevant identified uses of the substance or mixture and uses advised against

Use Growth regulator
Restrictions on use See product label for restrictions.

Information on supplier

Supplier Bayer Environmental Science
A division of Bayer CropScience LP
5000 Centregreen Way, Suite 400
Cary, NC 27513
USA

Responsible Department Email: SDSINFO.BCS-NA@bayer.com

Emergency telephone no.

Emergency Telephone Number (24hr/ 7 days) 1-800-334-7577

Product Information Telephone Number 1-800-331-2867

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200
Serious eye damage: Category 1

Labelling in accordance with regulation HCS 29CFR §1910.1200



Signal word: Danger

Hazard statements

Causes serious eye damage.

Precautionary statements

Wear eye protection/ face protection.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor/ physician.

Hazards Not Otherwise Classified (HNOC)
No physical hazards not otherwise classified.
No health hazards not otherwise classified.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Concentration % by weight
Ethephon	16672-87-0	21.7

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General advice	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
Inhalation	Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.
Skin contact	Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Call a physician or poison control center immediately.
Eye contact	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

Most important symptoms and effects, both acute and delayed

Symptoms	To date no symptoms are known.
Indication of any immediate medical attention and special treatment needed	
Risks	Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.
Treatment	Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

After oral ingestion of undiluted ethephon, treatment must follow the regimens for acid ingestion. In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable. Contraindication: atropine.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable Water spray, Carbon dioxide (CO₂), Foam, Dry powder

Unsuitable High volume water jet

Special hazards arising from the substance or mixture Dangerous gases are evolved in the event of a fire., In the event of fire the following may be released:, Carbon monoxide (CO), Hydrogen chloride (HCl), Nitrogen oxides (NO_x)

Advice for firefighters

Special protective equipment for firefighters Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

Further information Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.

Flash point Not relevant; aqueous solution

Auto-ignition temperature No data available

Lower explosion limit No data available

Upper explosion limit No data available

Explosivity No data available

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions Keep people away from and upwind of spill/leak. Avoid contact with spilled product or contaminated surfaces. When dealing with a spillage do not eat, drink or smoke. Use personal protective equipment.

Methods and materials for containment and cleaning up

Methods for cleaning up Recover the product by pumping, suction or absorption using a dry and inert absorbent clay. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Clean floors and contaminated objects with plenty of water. Decontaminate tools and equipment following cleanup.

Additional advice	Use personal protective equipment. If the product is accidentally spilled, do not allow to enter soil, waterways or waste water canal. Do not allow product to contact non-target plants.
Reference to other sections	Information regarding safe handling, see section 7. Information regarding personal protective equipment, see section 8. Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Use only in area provided with appropriate exhaust ventilation. Handle and open container in a manner as to prevent spillage.

Advice on protection against fire and explosion Keep away from heat and sources of ignition.

Hygiene measures Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.
Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area. Protect from freezing.

Advice on common storage Keep away from food, drink and animal feedingstuffs.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Ethephon	16672-87-0	1.4 mg/m3 (TWA)		OES BCS*

*OES BCS: Internal Bayer AG, Crop Science Division "Occupational Exposure Standard"

Exposure controls

Personal protective equipment

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

Respiratory protection When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry

	recommendations.
Hand protection	Chemical-resistant gloves (barrier laminate, butyl rubber, nitrile rubber or Viton)
Eye protection	Use tightly sealed goggles and face protection.
Skin and body protection	Wear long-sleeved shirt and long pants and shoes plus socks.
General protective measures	Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Form	Liquid
Colour	colourless to brown
Odour	characteristic
Odour Threshold	No data available
pH	ca. 0.8 (100 %) (23 °C) Determined in the undiluted form.
Melting point/freezing point	-5 °C / 23 °F
Boiling Point	No data available
Flash point	Not relevant; aqueous solution
Flammability	No data available
Auto-ignition temperature	No data available
Thermal decomposition	170 °C
Minimum ignition energy	No data available
Self-accelerating decomposition temperature (SADT)	No data available
Upper explosion limit	No data available
Lower explosion limit	No data available
Vapour pressure	< 0.013 hPa (25 °C)
Evaporation rate	No data available
Relative vapour density	No data available
Relative density	No data available
Density	ca. 1.11 g/cm ³ (20 °C)

Water solubility	soluble
Partition coefficient: n-octanol/water	Ethephon: log Pow: -1.89
Viscosity, dynamic	No data available
Viscosity, kinematic	No data available
Oxidizing properties	No data available
Explosivity	No data available
Other information	Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

Reactivity	Stable under normal conditions.
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	Corrodes metals in the presence of water or moisture. Risk of ethylene emission in case of increasing pH. No dangerous reaction known under conditions of normal use.
Conditions to avoid	Exposure to moisture. Heat, flames and sparks.
Incompatible materials	Zinc, Iron, Copper, Strong oxidizing agents, Bases, Mild steel, Aluminium
Hazardous decomposition products	No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes	Eye contact, Skin contact, Ingestion, Inhalation
Immediate Effects	
Eye	Corrosive - causes irreversible eye damage.
Skin	Harmful if absorbed through skin.
Ingestion	Harmful if swallowed.
Inhalation	Harmful if inhaled. May cause irritation of the mucous membranes.
Information on toxicological effects	
Acute oral toxicity	LD50 (male/female combined Rat) > 5,000 mg/kg
Acute inhalation toxicity	LC50 (male/female combined Rat) 4.5 mg/l Exposure time: 4 h Determined in the form of liquid aerosol.

	(actual) The value mentioned relates to the active ingredient.
Acute dermal toxicity	LD50 (male/female combined Rabbit) > 2,000 mg/kg
Skin corrosion/irritation	Moderate skin irritation. (Rabbit)
Serious eye damage/eye irritation	corrosive (Rabbit)
Respiratory or skin sensitisation	Skin: Non-sensitizing. (Guinea pig) The value mentioned relates to the active ingredient.

Assessment STOT Specific target organ toxicity – single exposure

Ethephon: Based on available data, the classification criteria are not met.

Assessment STOT Specific target organ toxicity – repeated exposure

Ethephon did not cause specific target organ toxicity in experimental animal studies.

Assessment mutagenicity

Ethephon was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment carcinogenicity

Ethephon was not carcinogenic in lifetime feeding studies in rats and mice.

ACGIH

None.

NTP

None.

IARC

None.

OSHA

None.

Assessment toxicity to reproduction

Ethephon did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity

Ethephon did not cause developmental toxicity in rats and rabbits.

Aspiration hazard

Based on available data, the classification criteria are not met.

Further information

Acute toxicity studies have been bridged from a similar formulation(s).
The non-acute information pertains to the active ingredient(s).

SECTION 12: ECOLOGICAL INFORMATION

Toxicity to fish	LC50 (Oncorhynchus mykiss (rainbow trout)) 720 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient ethephon.
Toxicity to aquatic invertebrates	EC50 (Daphnia magna (Water flea)) > 1,000 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient ethephon.
Toxicity to aquatic plants	EC50 (Raphidocelis subcapitata (freshwater green alga)) 13 mg/l Exposure time: 72 h The value mentioned relates to the active ingredient ethephon.
	EC50 (Lemna gibba (gibbous duckweed)) > 1.6 mg/l Exposure time: 14 d The value mentioned relates to the active ingredient ethephon.
	EC10 (Lemna gibba (gibbous duckweed)) 0.21 mg/l The value mentioned relates to the active ingredient ethephon.
Biodegradability	Ethephon: Not rapidly biodegradable
Koc	Ethephon: Koc: 2540
Bioaccumulation	Ethephon: Does not bioaccumulate.
Mobility in soil	Ethephon: Slightly mobile in soils
Results of PBT and vPvB assessment	
PBT and vPvB assessment	Ethephon: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).
Additional ecological information	No other effects to be mentioned.
Environmental precautions	Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Do not apply when weather conditions favor runoff or drift. Apply this product as specified on the label.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product	Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. Dispose in accordance with all local, state/provincial and federal
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	regulations.
Contaminated packaging	Triple rinse containers. Puncture container to avoid re-use. Dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State/Provincial and local authorities, by burning. If burned, stay out of smoke. Follow advice on product label and/or leaflet.
RCRA Information	Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.

SECTION 14: TRANSPORT INFORMATION

49CFR

UN number	3265
Class	8
Packaging group	III
Proper shipping name	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (ETHEPHON)

IMDG

UN number	3265
Class	8
Packaging group	III
Marine pollutant	NO
Proper shipping name	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (ETHEPHON SOLUTION)
Segregation group according to 5.4.1.5.11.1	IMDG SEGREGATION GROUP 1 - ACIDS

IATA

UN number	3265
Class	8
Packaging group	III
Environm. Hazardous Mark	NO
Proper shipping name	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (ETHEPHON SOLUTION)

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

Freight Classification: INHIBITORS, MODIFIERS OR REGULATORS, plant growth

SECTION 15: REGULATORY INFORMATION

EPA Registration No. 432-1230

US Federal Regulations

TSCA list

Water 7732-18-5

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

No export notification needs to be made.

SARA Title III - Section 302 - Notification and Information

Not applicable.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

None.

US States Regulatory Reporting

CA Prop65

This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients

Ethephon 16672-87-0 CT

Environmental

CERCLA

None.

Clean Water Section 307(a)(1)

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

EPA/FIFRA Information:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information required on the pesticide label:

Signal word: Danger!

Hazard statements: Corrosive - causes irreversible eye damage.
Harmful if swallowed or absorbed through skin.

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms

49CFR Code of Federal Regulations, Title 49

ACGIH	US. ACGIH Threshold Limit Values
ATE	Acute toxicity estimate
CAS-Nr.	Chemical Abstracts Service number
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
EINECS	European inventory of existing commercial substances
ELINCS	European list of notified chemical substances
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
N.O.S.	Not otherwise specified
NTP	US. National Toxicology Program (NTP) Report on Carcinogens
OECD	Organization for Economic Co-operation and Development
TDG	Transportation of Dangerous Goods
TWA	Time weighted average
UN	United Nations
WHO	World health organisation

NFPA 704 (National Fire Protection Association):

Health - 3 Flammability - 1 Instability - 0 Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 3 Flammability - 0 Physical Hazard - 0 PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: The following sections have been revised: Section 2: Hazards Identification. Section 6. Accidental Release Measures. Section 7: Handling and Storage. Section 8: Exposure Controls / Personal Protection. Section 12. Ecological information. Reviewed and updated for general editorial purposes.

Revision Date: 05/28/2021

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.

MATERIAL SAFETY DATA SHEET

Quali-Pro® Prodiamine 4L

Page 1 of 4

1. IDENTIFICATION

Product name:	Quali-Pro® Prodiamine 4L
Chemical name of active ingredient(s):	Prodiamine: 2,4-dinitro-N3,N3-dipropyl-6-(trifluoromethyl)-1,3-benzenediamine
Manufacturer/Registrant:	Makhteshim Agan of North America, Inc. 4515 Falls of Neuse Road, Suite 300 Raleigh, NC 27609 Phone: 919-256-9300
For fire, spill, and/or leak emergencies, contact Infotrac:	Phone: 1-800-535-5053
For medical emergencies and health and safety inquiries, contact Prosar:	Phone: 1-877-250-9291

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME	CAS NO.	%	OSHA PEL	ACGIH TLV	OTHER	NTP/IARC/OSHA (Carcinogen)
Prodiamine	29091-21-2	40.8	Not established	Not established	-	Not applicable

3. HAZARDS IDENTIFICATIONS

PHYSICAL PROPERTIES:

Appearance: Bright yellow liquid
Odor: Very faint amine

EMERGENCY OVERVIEW: CAUTION. May be harmful if swallowed, absorbed through skin, or inhaled. Avoid breathing vapor. Avoid contact with skin, eyes, or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash clothing before reuse.

HAZARDOUS DECOMPOSITION PRODUCTS: Can decompose at high temperatures forming toxic gases.

SYMPTOMS OF ACUTE EXPOSURE: Causes mild eye and skin irritation. Allergic skin reactions are possible.

MEDICAL CONDITIONS LIKELY TO BE AGGRAVATED BY EXPOSURE: None known.

4. FIRST AID MEASURES

FIRST AID	
IF SWALLOWED:	<ul style="list-style-type: none"> Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
IF IN EYES:	<ul style="list-style-type: none"> Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
IF INHALED:	<ul style="list-style-type: none"> Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.
IF ON SKIN OR CLOTHING:	<ul style="list-style-type: none"> Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact Prosar at 1-877-250-9291 for emergency medical treatment information.	

5. FIRE FIGHTING MEASURES

FLASH POINT: Not applicable

METHOD USED: Not applicable

FLAMMABLE LIMITS: Not applicable

AUTOIGNITION TEMPERATURE: Not applicable

FLAMMABILITY: Not applicable

EXTINGUISHING MEDIA: Foam, CO₂, dry chemical

UNUSUAL FIRE, EXPLOSION, AND REACTIVITY HAZARDS: During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

HAZARDOUS DECOMPOSITION PRODUCTS: Can decompose at high temperatures forming toxic gases.

FIRE-FIGHTING PROCEDURES: Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff.

6. ACCIDENTAL RELEASE MEASURES

ACTION TO TAKE FOR SPILLS/LEAKS: Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately. Cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING: Do not contaminate water, food or feed by storage or disposal. Wash thoroughly with soap and water after handling.

PRECAUTIONS TO BE TAKEN IN STORAGE: Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

STORAGE TEMPERATURE (MIN/MAX): Normal ambient temperatures.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

INGESTION PROTECTION: Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

EYE PROTECTION: Where contact is likely, use chemical splash goggles.

RESPIRATORY PROTECTION: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below exposure limits. A NIOSH-certified combination air-purifying respirator with an N, P or R 95 or HE class filter and an organic vapor cartridge may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a pressure demand atmosphere-supplying respirator if there is any potential for uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection.

SKIN PROTECTION: Where contact is likely, wear chemical-resistant gloves (such as nitrile or butyl), coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.

USER SAFETY RECOMMENDATIONS:

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- After handling this product, immediately wash the outside of gloves before removing them. Immediately wash thoroughly and change into clean clothing.

EXPOSURE GUIDELINES: Refer to Section 2.

ENGINEERING CONTROLS: Refer to product label.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Bright yellow liquid

ODOR: Very faint amine

FLASH POINT: Not applicable

pH: 7.46 (1% dispersion)

DENSITY: 1.165 g/cc (9.72 lb/gal) @24°C

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal use and storage conditions.

CONDITIONS TO AVOID: Thermal, mechanical and electrical ignition sources.

MATERIALS TO AVOID: Oxidizing agents.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS: Can decompose at high temperatures forming toxic gases.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY/IRRITATION STUDIES:

- Acute Oral LD₅₀ (Rat): >5,000 mg/kg
- Acute Dermal LD₅₀ (Rat): >5,000 mg/kg
- Acute Inhalation LC₅₀ (Rat): > 2.55 mg/L air (4-hours)
- Eye Irritation (Rabbit): Minimally Irritating
- Dermal Irritation (Rabbit): Slightly Irritating (Rabbit)
- Dermal Sensitization (Guinea Pig): Sensitizing (Guinea Pig)

REPRODUCTIVE/DEVELOPMENT EFFECTS:

- Prodiamine: Fetal toxicity at high dose levels (rats); development and maternal toxicity observed at 1 g/kg/day.

CHRONIC/SUBCHRONIC TOXICITY STUDIES:

- Prodiamine: Liver (alteration and enlargement) and thyroid effects (hormone imbalances) at high does levels (rats); decreased body weight gains.

CARCINOGENICITY:

- Prodiamine: Benign thyroid tumors (rat). None observed (mouse).

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL HAZARDS: This product has low solubility in water. At the limit of solubility, this product is not toxic to fish. However, at concentrations substantially above the level of water solubility, it may be toxic to fish. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent sites. Do not contaminate water when disposing of equipment wash water.

(Based on active ingredient – Prodiamine).

SUMMARY OF EFFECTS: Highly toxic to fish and invertebrates. Practically non-toxic to birds and bees.

ECO-ACUTE TOXICITY:

Rainbow Trout 96-hour LC50:	0.83 mg/L
Bluegill Sunfish 96-hour LC50:	0.55 mg/L
<i>Daphnia magna</i> 48-hour LC50:	0.66 mg/L
Bobwhite 8-day Dietary LC50:	>10,000 mg/L
Mallard 8-day Dietary LC50:	>10,000 mg/L
Bees LC50/EC50:	>100 ug/bee

ENVIRONMENTAL FATE: Does not bioaccumulate. Persistent in soil. Stable in water. Immobile in soil. Sinks in water (after 24 hours).

13. DISPOSAL CONSIDERATIONS

END USERS MUST DISPOSE OF ANY PRODUCT AS PER THE LABEL RECOMMENDATIONS.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Dispose of product containers, waste containers, and residues according to label instructions and local, state, and federal health and environmental regulations.

14. TRANSPORT INFORMATION

DOT CLASSIFICATION:

Not regulated

INTERNATIONAL TRANSPORTATION:

IMO (vessel): UN 3082, Environmentally Hazardous Substances, Liquid, N.O.S (prodiamine), 9, PG III, Marine pollutant

IATA (air): UN 3082, Environmentally Hazardous Substances, Liquid, N.O.S (prodiamine), 9, PG III, Marine pollutant

15. REGULATORY INFORMATION

SARA TITLE III CLASSIFICATION:

Section 302:	Not applicable.
Section 311/312:	Acute health hazard (immediate) Chronic health hazard (delayed)
Section 313:	Not applicable.

CA PROPOSITION 65: Not applicable

CERCLA RQ: Not applicable

RCRA CLASSIFICATION: Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

TSCA STATUS: The ingredients of this product are listed on the TSCA inventory or are exempt.

16. OTHER INFORMATION

HAZARD RATINGS	NFPA	HMIS		
HEALTH:	2	2	0	MINIMAL
FLAMMABILITY:	1	1	1	SLIGHT
REACTIVITY:	0	0	2	MODERATE
			3	HIGH
			4	SEVERE

MATERIAL SAFETY DATA SHEET
Quali-Pro® Oxadiazon SC
 Page 1 of 4

1. IDENTIFICATION

Product name: **Quali-Pro® Oxadiazon SC**
 Chemical name of active ingredient(s): Oxadiazon: 3-[2,4-dichloro-5-(1-methylethoxy)phenyl]-5-(1,1-dimethylethyl)-1,3,4-oxadiazol-2(3H)-one
 Manufacturer: Makhteshim Agan of North America, Inc.
 4515 Falls of Neuse Road, Suite 300
 Raleigh, NC 27609
 Phone: 919-256-9300
 Phone: 1-800-535-5053

For fire, spill, and/or leak emergencies, contact Infotrac: Phone: 1-877-250-9291
 For medical emergencies and health and safety inquiries, contact Prosar:

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME	CAS NO.	%	OSHA PEL	ACIGH TLV	OTHER	NTP/IARC/OSHA (Carcinogen)
Oxadiazon	19666-30-9	34.4	NA	NA	NA	NA

NA = Not applicable

3. HAZARDS IDENTIFICATIONS

PHYSICAL PROPERTIES

Appearance: Off-White to creamy beige liquid
 Odor: None

EMERGENCY OVERVIEW: CAUTION Harmful if swallowed or absorbed through the skin. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

HAZARDOUS DECOMPOSITION PRODUCTS: Combustion may generate NOx and carbon oxides.

PRIMARY ROUTES OF EXPOSURE: Eye and skin contact, ingestion.

4. FIRST AID MEASURES

IF SWALLOWED:	<ul style="list-style-type: none"> Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
IF IN EYES:	<ul style="list-style-type: none"> Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
IF ON SKIN OR CLOTHING:	<ul style="list-style-type: none"> Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.
IF INHALED:	<ul style="list-style-type: none"> Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact Prosar at 1-877-250-9291 for emergency medical treatment information.

5. FIRE FIGHTING MEASURES

FLASH POINT: > 230°F (>110° C)

FLAMMABLE LIMITS: LFL/UFL: Not applicable

EXTINGUISHING MEDIA: Use water spray, dry chemical, carbon dioxide, or foam.

HAZARDOUS DECOMPOSITION PRODUCTS: Combustion may generate NOx and carbon oxides.

FIRE-FIGHTING EQUIPMENT: Wear protective clothing and self-contained breathing apparatus. Dike areas to prevent runoff and contamination of water sources. Dispose of fire control water later.

6. ACCIDENTAL RELEASE MEASURES

ACTION TO TAKE FOR SPILLS/LEAKS: Wear appropriate OSHA regulated equipment such as impervious gloves and other proper personal protection. Ventilate area. Absorb spill with absorbent material. Sweep up and place in container for disposal. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes. Dispose of all wastes and rinsate in the appropriate manner. Notify the appropriate authorities immediately if water used to fight fire or clean spill enters sewer or watercourse.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING: Avoid contact with skin, eyes and clothing. Keep containers tightly closed. Do not contaminate food or feedstuffs.

PRECAUTIONS TO BE TAKEN IN STORAGE: Do not store in or around the home.

STORAGE TEMPERATURE (MIN/MAX): Normal ambient temperatures.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT. FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

EYE PROTECTION: Chemical goggles or safety glasses.

SKIN PROTECTION: Long-sleeve shirt, long pants, shoes plus socks.

HAND PROTECTION: Chemical-resistant gloves, such as barrier laminate, butyl rubber, nitrile rubber and neoprene rubber (all =14 mils)..

RESPIRATOR REQUIREMENTS: In areas with inadequate ventilation a NIOSH approved respirator or a self-contained breathing apparatus may be required.

VENTILATION: Whenever possible, engineering controls should be used to minimize the need for personal protective equipment.

ADDITIONAL PROTECTIVE MEASURES: Follow manufacturer's instructions for cleaning/maintaining personal protective equipment. If no such instructions for washables exists, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing or other materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

USER SAFETY RECOMMENDATIONS:

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. then wash body thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product.
- Wash the outside of gloves before removing.
- As soon as possible was thoroughly and change into clean clothing.

EXPOSURE GUIDELINES: Refer to Section 2.

ENGINEERING CONTROLS: Minimize airborne concentrations.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Off-White to creamy beige

ODOR: None

FLASH POINT: >230° F (>110° C)

pH: 4.64 (1% dispersion)
DENSITY: 1.094 g/cc (9.13 lb/gal) @24oC

10. STABILITY AND REACTIVITY

STABILITY: This material is stable under normal handling and storage conditions.

MATERIALS TO AVOID: Strong oxidizers, mineral acids, strong bases, strong acids.

CONDITIONS TO AVOID: Extreme humidity

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS: Combustion may generate NOx and carbon oxides.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY/IRRITATION STUDIES:

Acute Oral:	LD ₅₀ (Rat): >2,000 mg/kg (female rat)
Acute Dermal:	LD ₅₀ (Rabbit): >2,000 mg/kg (rat)
Acute Inhalation:	LC ₅₀ (Rat): >2.31 mg/L (4 hours) (rat)
Eye Irritation:	Mildly irritating (rabbit)
Dermal Irritation:	Slightly irritating (rabbit)
Dermal Sensitization:	Not a skin sensitizer (guinea pig)

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL HAZARDS: Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters. Quali-Pro® Oxadiazon SC Herbicide should not be used in areas where irrigation or rainfall results in the direct or indirect (via ditches and canals) contamination of surface waters through dissolved runoff or erosion of soil particles to which oxadiazon is absorbed.

13. DISPOSAL CONSIDERATIONS

END USERS MUST DISPOSE OF ANY UNUSED PRODUCT AS PER THE LABEL RECOMMENDATIONS.

PRODUCT DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Dispose of product containers, waste containers and residues according to label instructions and local, state, federal and environmental regulations.

14. TRANSPORT INFORMATION

DOT CLASSIFICATION: Not regulated

INTERNATIONAL TRANSPORTATION:

IMO (vessel): Not regulated

IATA (air): Not regulated

15. REGULATORY INFORMATION

SARA TITLE III CLASSIFICATION:

Section 302/304: Not applicable
Section 311/312: Acute Health Hazard (immediate)
Section 313 chemical(s): Oxadiazon (CAS # 19666-30-9) (34.4%)

CA PROPOSITION 65: This product contains a chemical (Oxadiazon, CAS#: 19666-30-9) known to the state of California to cause cancer and developmental toxicity.

CERCLA RQ: Not applicable.

RCRA CLASSIFICATION: Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

TSCA STATUS: The ingredients of this product are listed on the TSCA inventory or are exempt.

16. OTHER INFORMATION

HAZARD RATINGS	NFPA	HMIS		
HEALTH:	1	2	0	MINIMAL
FLAMMABILITY:	0	0	1	SLIGHT
REACTIVITY:	0	0	2	MODERATE
			3	HIGH
			4	SEVERE

MSDS DATE: 8-12-09

The information herein is given in good faith, but no warrant, express or implied, is made. Consult Makhteshim Agan of North America, Inc. for further information.