Safety Data Sheets

CD-HF

Roadyard Willcox Herbicide

03/05/2018

Safety Data Sheet Index

Binder: Roadyard Willcox Herbicide - CD-HF

1. Identification

Product identifier used on the label

ARSENAL POWERLINE HERBICIDE

Recommended use of the chemical and restriction on use
Recommended use*: herbicide

* The “Recommended use” identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

Company:
BASF CORPORATION
100 Park Avenue
Florham Park, NJ 07932, USA

Telephone: +1 973 245-6000

Emergency telephone number

CHEMTREC: 1-800-424-9300
BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification

Substance number:	234359
EPA Registration number:	241-431
Molecular formula:	C(13) H(15) N(3) O(3). C(3) H(9) N
Chemical family:	imidazole derivative
Synonyms:	Isopropylamine salt of imazapyr

2. Hazards Identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Classification of the product

Skin Sens.	1	Skin sensitization

Label elements

Pictogram:

Signal Word:
Warning

Hazard Statement:

H317	May cause an allergic skin reaction.

Precautionary Statements (Prevention):

P280	Wear protective gloves.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P272	Contaminated work clothing should not be allowed out of the workplace.

Precautionary Statements (Response):

P303 + P352	IF ON SKIN (or hair): Wash with plenty of soap and water.
P333 + P311	If skin irritation or rash occurs: Call a POISON CENTER or doctor/physician.
P362 + P364	Take off contaminated clothing and wash it before reuse.

Precautionary Statements (Disposal):

P501	Dispose of contents/container to hazardous or special waste collection point.

According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Emergency overview

CAUTION:
May cause moderate but temporary irritation to the eyes.
Prolonged or repeated skin contact may cause sensitization or allergic reactions.
HARMFUL IF SWALLOWED.
KEEP OUT OF REACH OF CHILDREN.
KEEP OUT OF REACH OF DOMESTIC ANIMALS.
Avoid contact with the skin, eyes and clothing.
Avoid inhalation of mists/vapours.

3. Composition / Information on Ingredients

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

CAS Number	Weight %	Chemical name
81510-83-0	26.7 %	imazapyr isopropylamine salt

According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

CAS Number	Weight %	Chemical name
81510-83-0	26.7 %	imazapyr isopropylamine salt
	73.3 %	Proprietary ingredients

4. First-Aid Measures

Description of first aid measures

General advice:
Remove contaminated clothing.

If inhaled:
Keep patient calm, remove to fresh air, seek medical attention.

If on skin:
Wash thoroughly with soap and water.

If in eyes:
Wash affected eyes for at least 15 minutes under running water with eyelids held open.

If swallowed:
Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11., Further important symptoms and effects are so far not known.

Indication of any immediate medical attention and special treatment needed

Note to physician

Treatment:	Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:
foam, dry powder, carbon dioxide, water spray

Special hazards arising from the substance or mixture

Hazards during fire-fighting:
carbon monoxide, carbon dioxide, nitrogen oxide, nitrogen dioxide, Hydrocarbons,
If product is heated above decomposition temperature, toxic vapours will be released. The substances/groups of substances mentioned can be released if the product is involved in a fire.

Advice for fire-fighters

Protective equipment for fire-fighting:
Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:
In case of fire and/or explosion do not breathe fumes. Keep containers cool by spraying with water if exposed to fire. Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Take appropriate protective measures. Clear area. Shut off source of leak only under safe conditions. Extinguish sources of ignition nearby and downwind. Ensure adequate ventilation. Wear suitable personal protective clothing and equipment.

Environmental precautions
Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater. Contain contaminated water/firefighting water.

Methods and material for containment and cleaning up
Dike spillage. Pick up with suitable absorbent material. Place into suitable containers for reuse or disposal in a licensed facility. Spilled substance/product should be recovered and applied according to label rates whenever possible. If application of spilled substance/product is not possible, then spills should be contained, solidified, and placed in suitable containers for disposal. After decontamination, spill area can be washed with water. Collect wash water for approved disposal.

7. Handling and Storage

Precautions for safe handling
RECOMMENDATIONS ARE FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS. PESTICIDE APPLICATORS & 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. Ensure adequate ventilation. Provide good ventilation of working area (local exhaust ventilation if necessary). Keep away from sources of ignition - No smoking. Keep container tightly sealed. Protect contents from the effects of light. Protect against heat. Protect from air. Handle and open container with care. Do not open until ready to use. Once container is opened, content should be used as soon as possible. Avoid aerosol formation. Avoid dust formation. Provide means for controlling leaks and spills. Do not return residues to the storage containers. Follow label warnings even after container is emptied. The substance/ product may be handled only by appropriately trained personnel. Avoid all direct contact with the substance/product. Avoid contact with the skin, eyes and clothing. Avoid inhalation of dusts/mists/vapours. Wear suitable personal protective clothing and equipment.

Protection against fire and explosion:
The relevant fire protection measures should be noted. Fire extinguishers should be kept handy. Avoid all sources of ignition: heat, sparks, open flame. Sources of ignition should be kept well clear. Avoid extreme heat. Keep away from oxidizable substances. Electrical equipment should conform to national electric code. Ground all transfer equipment properly to prevent electrostatic discharge. Electrostatic discharge may cause ignition.

Conditions for safe storage, including any incompatibilities
Segregate from incompatible substances. Segregate from foods and animal feeds. Segregate from textiles and similar materials.

Further information on storage conditions: Keep only in the original container in a cool, dry, well-ventilated place away from ignition sources, heat or flame. Protect containers from physical damage. Protect against contamination. The authority permits and storage regulations must be observed.

8. Exposure Controls/Personal Protection

Users of a pesticidal product should refer to the product label for personal protective equipment requirements.

Advice on system design:
Whenever possible, engineering controls should be used to minimize the need for personal protective equipment.

Personal protective equipment

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

Respiratory protection:
Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) TC23C Chemical/Mechanical type filter system to remove a combination of particles, gas and vapours. For situations where the airborne concentrations may exceed the level for which an air purifying respirator is effective, or where the levels are unknown or Immediately Dangerous to Life or Health (IDLH), use NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.

Hand protection:
Chemical resistant protective gloves, Protective glove selection must be based on the user's assessment of the workplace hazards.

Eye protection:
Safety glasses with side-shields. Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

Body protection:
Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

General safety and hygiene measures:
Wear long sleeved work shirt and long work pants in addition to other stated personal protective equipment. Work place should be equipped with a shower and an eye wash. Handle in accordance with good industrial hygiene and safety practice. Personal protective equipment should be decontaminated prior to reuse. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Take off immediately all contaminated clothing. Store work clothing separately. Hands and/or face should be washed before breaks and at the end of the shift. No eating, drinking, smoking or tobacco use at the place of work. Keep away from food, drink and animal feeding stuffs.

9. Physical and Chemical Properties

Form:	liquid
Odour:	odourless
Odour threshold:	not applicable, odour not perceivable
Colour:	transparent light yellow
pH value:	approx. 6 - 8 (25 °C)
Freezing point:	approx. 0 °C (1,013.3 hPa) Information applies to the solvent.
Boiling point:	approx. 100 °C (1,013.3 hPa) Information applies to the solvent.

Flash point:	> 100 °C The product has not been tested. The statement has been derived from the properties of the individual components.
Flammability:	not applicable
Lower explosion limit:	As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.
Upper explosion limit:	As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.
Autoignition:	Based on the water content the product does not ignite.
Vapour pressure:	approx. 23.3 hPa (20 °C) Information applies to the solvent.
Density:	approx. 1.10 g/cm3 (20 °C)
Relative density:	1.10 (20 °C)
Vapour density:	not applicable
Partitioning coefficient n-octanol/water (log Pow):	not applicable
Thermal decomposition:	carbon monoxide, carbon dioxide, nitrogen oxide, nitrogen dioxide, Hydrocarbons Stable at ambient temperature. If product is heated above decomposition temperature toxic vapours may be released.
Viscosity, dynamic:	163.2 mPa.s (20 °C)
Solubility in water:	miscible
Molar mass:	320.4 g/mol
Evaporation rate:	not applicable
Other Information:	If necessary, information on other physical and chemical parameters is indicated in this section.

10. Stability and Reactivity

Reactivity
No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals:
Corrosive effect on: mild steel brass

Oxidizing properties:
Not an oxidizer.

Chemical stability
The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

The product is chemically stable.

Conditions to avoid
Avoid all sources of ignition: heat, sparks, open flame. Avoid prolonged storage. Avoid electro-static discharge. Avoid contamination. Avoid prolonged exposure to extreme heat. Avoid extreme temperatures.

Incompatible materials
oxidizing agents, reducing agents

Hazardous decomposition products

Decomposition products:
No hazardous decomposition products if stored and handled as prescribed/indicated., Prolonged thermal loading can result in products of degradation being given off.

Thermal decomposition:
Possible thermal decomposition products:
carbon monoxide, carbon dioxide, nitrogen oxide, nitrogen dioxide, Hydrocarbons
Stable at ambient temperature. If product is heated above decomposition temperature toxic vapours may be released.

11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity
Assessment of acute toxicity: Slightly toxic after single ingestion. Relatively nontoxic after short-term skin contact. Relatively nontoxic after short-term inhalation.

Oral
Type of value: LD50
Species: rat
Value: > 2,000 mg/kg (OECD Guideline 423)
No mortality was observed.

Inhalation
Type of value: LC50
Species: rat
Value: > 5.5 mg/l
Exposure time: 4 h
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Dermal
Type of value: LD50
Species: rabbit
Value: > 5,000 mg/kg (OECD Guideline 402)
No mortality was observed.

Assessment other acute effects

Assessment of STOT single:
The available information is not sufficient for evaluation.

The product has not been tested. The statement has been derived from the properties of the individual components.

Irritation / corrosion
Assessment of irritating effects: May cause slight but temporary irritation to the eyes. May cause slight irritation to the skin.

Skin
Species: rabbit
Result: non-irritant
Method: Primary skin irritation test

Eye
Species: rabbit
Result: non-irritant

Sensitization
Assessment of sensitization: Caused skin sensitization in animal studies.

Skin sensitization test
Species: guinea pig
Result: Caused skin sensitization in animal studies.

Chronic Toxicity/Effects

Genetic toxicity
Assessment of mutagenicity: The product has not been tested. The statement has been derived from the properties of the individual components. Mutagenicity tests revealed no genotoxic potential.

Carcinogenicity
Assessment of carcinogenicity: The product has not been tested. The statement has been derived from the properties of the individual components. The results of various animal studies gave no indication of a carcinogenic effect.

Reproductive toxicity
Assessment of reproduction toxicity: The product has not been tested. The statement has been derived from the properties of the individual components. The results of animal studies gave no indication of a fertility impairing effect.

Teratogenicity
Assessment of teratogenicity: The product has not been tested. The statement has been derived from the properties of the individual components. Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals.

Symptoms of Exposure

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11., Further important symptoms and effects are so far not known.

Medical conditions aggravated by overexposure
Individuals with pre-existing diseases of the respiratory system, skin or eyes may have increased susceptibility to excessive exposures.

12. Ecological Information

Toxicity

Aquatic toxicity
Assessment of aquatic toxicity:
There is a high probability that the product is not acutely harmful to fish. There is a high probability that the product is not acutely harmful to aquatic invertebrates. Acutely harmful for aquatic plants.

There is a high probability that the product is not acutely harmful to aquatic organisms.

Toxicity to fish
LC50 (96 h) > 120 mg/l, Cyprinus carpio

Aquatic invertebrates
EC50 (48 h) > 100 mg/l, Daphnia magna

Aquatic plants
EC50 (72 h) > 98.0 mg/l, Pseudokirchneriella subcapitata

No observed effect concentration (72 h) 25.8 mg/l, Pseudokirchneriella subcapitata

Assessment of terrestrial toxicity
With high probability not acutely harmful to terrestrial organisms.

Other terrestrial non-mammals

Information on: imazapyr
LC50, Anas platyrhynchos
With high probability not acutely harmful to terrestrial organisms.
LD50 > 100 ug/bee, Apis mellifera
With high probability not acutely harmful to terrestrial organisms.

Mobility in soil

Assessment transport between environmental compartments
The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: Imazapyr

The substance will not evaporate into the atmosphere from the water surface.
Following exposure to soil, the product trickles away and can - dependant on degradation - be transported to deeper soil areas with larger water loads.

Additional information

Other ecotoxicological advice:
The ecological data given are those of the active ingredient. Do not release untreated into natural waters.

13. Disposal considerations

Waste disposal of substance:
Pesticide wastes are regulated. Improper disposal of excess pesticide, spray mix or rinsate is a violation of federal law. If pesticide wastes cannot be disposed of according to label instructions, contact the State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container disposal:
Rinse thoroughly at least three times (triple rinse) in accordance with EPA recommendations. Consult state or local disposal authorities for approved alternative procedures such as container recycling. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

RCRA:
This product is not regulated by RCRA.

14. Transport Information

Land transport
USDOT

Not classified as a dangerous good under transport regulations

Sea transport
IMDG

Not classified as a dangerous good under transport regulations

Air transport
IATA/ICAO

Not classified as a dangerous good under transport regulations

15. Regulatory Information

Federal Regulations

Registration status:

Crop Protection	TSCA, US	released / exempt
Chemical	TSCA, US	blocked / not listed

EPCRA 311/312 (Hazard categories): Not hazardous;

CA Prop. 65:
Risk assessment indicates No Significant Risk Levels for Carcinogens and No Maximum Allowable Dose Levels for Chemicals Causing Reproductive Toxicity are expected when using this product as labeled for agricultural or residential use.

NFPA Hazard codes:
Health : 2 Fire: 1 Reactivity: 0 Special:

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 workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label.

CAUTION:
May cause moderate but temporary irritation to the eyes.
Prolonged or repeated skin contact may cause sensitization or allergic reactions.
HARMFUL IF SWALLOWED.
KEEP OUT OF REACH OF CHILDREN.
KEEP OUT OF REACH OF DOMESTIC ANIMALS.
Avoid contact with the skin, eyes and clothing.
Avoid inhalation of mists/vapours.

16. Other Information

SDS Prepared by:
BASF NA Product Regulations
SDS Prepared on: 2016/06/16

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

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END OF DATA SHEET

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CALL CHEMTREC - DAY OR NIGHT 1-800-424-9300

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 PRODUCT IDENTIFIER: **EPA REGISTRATION NO. 34704-120**
TRADE NAME: **CLEAN AMINE®**
1.2 RECOMMENDED USE: FOR SELECTIVE BROADLEAF WEED CONTROL IN CERTAIN CROPS, TURF AND NON-CROP AREAS
1.3 SUPPLIER DETAILS:
LOVELAND PRODUCTS, INC.
P.O. Box 1286 • Greeley, CO 80632-1286
1.4 24 Hour Emergency Phone: 1-800-424-9300 - **Medical Emergencies:** 1-866-944-8565 – **Product Information:** 1-888-574-2878 (LPI-CUST)
U.S. Coast Guard National Response Center: 1-800-424-8802

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to 29 CFR 1910.1200

Eye Damage/Irritation	Category 1	H318
Acute Toxicity - Oral	Category 4	H302

2.2 Label elements

Signal word: DANGER

Hazard Statement:
H318 – Causes serious eye damage.
H302 – Harmful if swallowed.

Precautionary Statement: (Prevention):
P280 – Wear protective gloves/protective clothing/eye protection/face protection.
P264 – Wash thoroughly after handling.
P270 – Do not eat, drink or smoke when using this product.

Precautionary Statement: (Response):
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P310 – Immediately call a poison center/doctor/physician.
P301+P312 – IF SWALLOWED: Call a poison center/doctor/physician if you feel unwell.
P330 – Rinse mouth.

Precautionary Statement: (Storage):
Not applicable or required.

Precautionary Statement: (Disposal):
P501 – Dispose of contents/container in accordance with local, state and federal regulations.

2.3 Other hazards

None known

3. COMPOSITION, INFORMATION ON INGREDIENTS

3.1 Substances

3.2 Mixtures

Classification according to 29 CFR 1910.1200

Chemical Name:	CAS No.	Concentration [%]
Dimethylamine salt of 2,4-D	2008-39-1	46.50
*Other ingredients	n/a	53.50

*Ingredients not specifically listed are non-hazardous and are to be considered proprietary or confidential business information per 29 CFR 1910.1200(i)

4. FIRST AID MEASURES

4.1 Description of First Aid Measures

General Advice: Get medical attention if symptoms occur.

If in eyes: 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 swallowed: 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 the poison control center or doctor. Do not give anything by mouth to an unconscious person.

If on skin or clothing: Take of contaminated clothing. Rinse skin immediately with plenty of water for 15-20 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.

4.2 Most Important Symptoms and Effects, Acute and Delayed

Symptoms: Eyes: Causes serious eye damage.
Oral: Harmful if swallowed.

4.3 Immediate Medical Attention and Special Treatment

Treatment: Treat symptomatically. Symptoms may be delayed.
FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-866-944-8565
Take container, label or product name with you when seeking medical attention.

NOTES TO PHYSICIAN: Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE FIGHTING MEASURES

5.1 EXTINGUISHING MEDIA:

Suitable Extinguishing Media: Use medium appropriate to surrounding fire. Dry chemical, carbon dioxide (CO_2), alcohol foam, foam, water spray or fog.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:

Specific Hazards During Firefighting: Ammonia, oxides of nitrogen, chlorine-containing compounds and other unknown materials may be formed in a fire situation.

5.3 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS

Special Protective Equipment for Firefighters: Self-contained breathing apparatus and full protective gear should be worn in fighting large fires involving chemicals. Use water spray to keep fire exposed containers cool. Keep people away. Isolate fire and deny unnecessary entry.

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Personal Precautions: Avoid inhalation of vapors and spray mist and contact with skin and eyes. Ensure adequate ventilation. Wear suitable protective clothing.

6.2 ENVIRONMENTAL PRECAUTIONS

Environmental Precautions: 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 disposing of equipment washwaters or rinsate.

6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEAN-UP

Methods for Clean-Up: Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. After removal flush contaminated area thoroughly with water.
Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to Remove residual contamination.
Never return spills to original containers for re-use.

7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING:

Advice on Safe Handling: 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. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

7.2 CONDITIONS FOR SAFE STORAGE:

Requirements for Storage Areas and Containers: Do not store below temperature of 25° F. If frozen, warm to 70° F. and redissolve before using by rolling or shaking the container. Store in a safe manner. Store in original container only. Store in cool, dry place. Keep container tightly closed when not in use. Reduce stacking height where local conditions can affect package strength. Personnel should use clothing and equipment consistent with good pesticide handling. Do not contaminate water, food or feed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 CONTROL PARAMETERS:

OCCUPATIONAL EXPOSURE LIMITS

U.S. Workplace Exposure Level (ACGIH) TLVs

Components	Type	Value
2,4-D Acid	TLV	10 mg/m^3
Dimethylamine	TLV	9.2 mg/m^3

U.S. Workplace Exposure Level (OSHA) PELs

Components	Type	Value
2,4-D Acid	TLV	10 mg/m^3
Dimethylamine	TLV	18 mg/m^3

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Specimen
No listings		

8.2 EXPOSURE CONTROLS:

Engineering Measures

Provide adequate general and local exhaust ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors and spray mists. Provide eyewash station and safety shower.

Individual Protection Measures:

Eye / Face Protection: Goggles or shielded safety glasses are recommended.

Skin Protection: Long-sleeved shirt and long pants. Chemical-resistant gloves, such as polyethylene or polyvinylchloride. Shoes plus socks.

Respiratory Protection: In case of inadequate ventilation or risk of inhalation of mists or vapors, use suitable respiratory equipment such as MSHA/NIOSH TC-84A with NIOSH equipped N, R, or P class filter media. Wear respiratory protection during operations where spraying or misting occurs. If respirators are used, a program should be in place to assure compliance with 29 CFR 1910.134, the OSHA Respiratory Protection standard. Wear air supplied respiratory protection if exposure concentrations are unknown.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 APPEARANCE: Liquid
ODOR: Fishy, amine-like.
ODOR THRESHOLD: No data available.
COLOR: Amber to nearly black.
pH: 6.6
MELTING POINT / FREEZING POINT: No data available
BOILING POINT: No data available
FLASH POINT: Does not flash.
FLAMMABILILITY (solid, gas): No data available.
UPPER / LOWER FLAMMABILITY OR EXPLOSIVE LIMITS: No data available.
VAPOR PRESSURE: 0.00141 mmHg @ 20 °C.
SOLUBILITY: Miscible.
PARTITION CO-EFFICIENT, n-OCTANOL / WATER: No data available.
AUTO-IGNITION TEMPERATURE: No data available.
DECOMPOSITION TEMPERATURE: No data available.
VISCOSITY: (kinematic): No data available
SPECIFIC GRAVITY (Water = 1): 1.158 g/ml
DENSITY: 9.66 lbs/gal **/** 1.16 kg/L

Note: 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 specification items.

10. STABILITY AND REACTIVITY

10.1 REACTIVITY
Stable
10.2 CHEMICAL STABILITY
Stable under normal temperature conditions
10.3 POSSIBILITY OF HAZARDOUS REACTIONS
No data available. Will not polymerize.
10.4 CONDITIONS TO AVOID
Excessive heat and moisture.
10.5 INCOMPATIBILE MATERIALS
Strong acids.
10.6 HAZARDOUS DECOMPOSITION PRODUCTS
Ammonia, oxides of nitrogen, chlorine-containing compounds and other unknown hazardous material may be formed in a fire situation. Oxides of carbon and/or other asphyxiants may be formed from incomplete combustion.

11 TOXICOLOGICAL INFORMATION

11.3 LIKELY ROUTES OF EXPOSURE
Eye contact. Harmful if swallowed.
LC_{50} (rat): >5.28 mg/L (4 HR)
LD_{50} Oral (rat): 1,670 mg/kg
LD_{50} Dermal (rat): > 2,000 mg/kg
Acute Toxicity Estimates: No data available
Skin Irritation (rabbit): not an irritant.
Eye Irritation (rabbit): Corrosive; causes irreversible eye damage.
Specific Target Organ Toxicity: Skin, CNS, liver, kidneys.
Aspiration: No data available
Skin Sensitization (guinea pig): Not a sensitizer
Carcinogenicity: IARC Group 2B (limited evidence for carcinogenicity in humans).
Germ Cell Mutagenicity: No data available
Interactive Effects: None known

12 ECOLOGICAL INFORMATION

12.3 ECOTOXICITY

The product may be toxic to fish and aquatic invertebrates. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Information below is based on the technical ingredient 2,4-D acid.

Ecotoxicological Data

	Species	Test Results
2,4-D Acid	Rainbow trout	245 mg/L – 96-hour LC_{50}
	Bluegill	524 mg/L – 96-hour LC_{50}
	Fathead minnow	344 mg/L – 96-hour LC_{50}
	Pink shrimp	181 mg/L – 96-hour LC_{50}
	Daphnia magna	184 mg/L – 96-hour LC_{50}
	Tidewater silverside	469 mg/L –96-hour LC_{50}
	Eastern oyster	136 mg/L – 48-hour EC_{50}

Drift or runoff may adversely affect non-target plants.
Do not apply directly to water.
Do not contaminate water when disposing of equipment wash water.
Do not apply when weather conditions favor drift from target area.

12.2 PERSISTENCE AND DEGRADABILITY

Biodegradability: Biochemical oxygen demand is 0.72 for 5, 10 and 20 days. Chemical oxygen demand is 0.72. Under aerobic soil conditions the half-life is 4 – 23 days. Under aerobic aquatic conditions, the half-life is 0.5 – 11 days.

12.3 BIOACCUMULATIVE POTENTIAL

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or log Pow < 3).

12.4 MOBILITY IN SOIL

High (50 < Koc < 150). Soil organic carbon/water partition coefficient (Koc) is 72-136.

12.5 OTHER ADVERSE EFFECTS

Assessment: No data available.

13 DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS

Wastes may be disposed of on site or at an approved waste disposal facility. Triple rinse (or equivalent), adding rinse water to spray tank. Offer container for recycling or dispose of in a sanitary landfill or by other procedures approved by appropriate authorities. Recycling decontaminated containers is the best option of container disposal. The Agricultural Container Recycling Council (ACRC) operates the national recycling program. To contact your state and local ACRC recycler visit the ACRC web page at http://www.acrecycle.org/. Do not contaminate water, food or feed by storage or disposal.

14 TRANSPORT INFORMATION

14.3 LAND TRANSPORT

DOT Shipping Description: Less than 27 gallons: NOT REGULATED BY DOT
DOT Shipping Description: Greater than 27 gallons: RQ UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., 9, III (2,4-D), ERG GUIDE 171
U.S. Surface Freight Classification: COMPOUND, TREE OR WEED KILLING, NOI (NMFC 50320, SUB 2: CLASS: 60)

15 REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS

NFPA & HMIS Hazard Ratings:

NFPA				HMIS	
3	Health	0	Least	3	Health
0	Flammability	1	Slight	0	Flammability
0	Instability	2	Moderate	0	Reactivity
		3	High	H	PPE
		4	Severe		

SARA Hazard Notification/Reporting
SARA Title III Hazard Category:

Immediate	Y	Fire	N	Sudden Release of Pressure	N
Delayed	N	Reactive	N		

Reportable Quantity (RQ) under U.S. CERCLA: 2,4-D Acid (CAS: 94-75-7) 100 pounds.
SARA, Title III, Section 313: 2,4-D Acid (CAS: 94-75-7) 38.6% acid equivalent
RCRA Waste Code: U240; D016
CA Proposition 65: Not listed.

This chemical is a pesticide product registered by the United States 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 (SDS), and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

DANGER
Corrosive
Causes irreversible eye damage.
Harmful if swallowed.
Do not get in eyes or on clothing.

16 OTHER INFORMATION

SDS STATUS: Sections 1 and 2 revised.

PREPARED BY: Registrations and Regulatory Affairs **REVIEWED BY:** Environmental Health and Safety

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SAFETY DATA SHEET

DREXEL SIMAZINE 90DF HERBICIDE

Section 1: Material Identification

Product Name: Drexel Simazine 90DF Herbicide

EPA Reg No.: 19713-252

CAS NO: 122-34-9

Formula: $C_8H_{14}ClN_5$

Company: Drexel Chemical Company
1700 Channel Avenue
Memphis, TN 38106

Identifiers:

EINECS: 204-535-2
RTECS: XY5250000
DOT information: See Section 14 for Transportation Information

Emergency Telephone Number:

CHEMTREC Drexel Chemical Co.
Tel: 1-800-424-9300 901-774-4370

This product is an EPA FIFRA registered pesticide. Some of the classifications on this SDS are not the same as the FIFRA label. Certain sections of this SDS are superseded by federal law governed by EPA for a registered pesticide. Please see **Section 15: REGULATORY INFORMATION** for explanation.

Section 2: Hazard Identification
(As defined by the OSHA Hazard Communication Standard, 29)

GHS classification:

Health hazards:	Skin corrosion/irritation	Category 2
	Eye damage/irritation	Category 2A
	Carcinogenicity	Category 2
Environmental hazards:	Aquatic acute toxicity	Category 1
	Aquatic chronic toxicity	Category 1

GHS label elements:

Signal word: Warning

Hazard statements:

Causes skin irritation.
Causes serious eye irritation.
Suspected of causing cancer.
Very toxic to aquatic life.
Very toxic to aquatic life with long lasting effects.

Precautionary statements:

Prevention:

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wash exposed skin thoroughly after handling.
Avoid release to the environment.
Wear eye protection, protective gloves.

Response:

If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. **If eye irritation persists:** Get medical advice/attention.
If exposed or concerned: Get medical advice/attention.
Collect spillage.

Storage:

Store locked up.

Disposal:

If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities.

Section 3: Composition Information

Components	CAS No.:	% By Wt.:	OSHA PEL:	ACGIH TLV:
Active ingredient:				
Simazine	122-34-9	90.0%	N/Av	5 mg/m^3
Inert Ingredients:	N/A	10.0%	N/A	N/A

Section 4: First-Aid Measures

Have product label with you when calling a poison control center or doctor or going for treatment.

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 Swallowed: Call a poison control center or doctor immediately for treatment advice. Rinse mouth with water then have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious or convulsing person.

If on Skin or Clothing: Take of contaminated clothing. Rinse skin with plenty of water for 15-20 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.

Section 5: Fire Fighting Measures

Fire Hazards: Thermal decomposition during a fire can produce fumes and irritating gases.

Flammability classification (OSHA 29 CFR 1910.1200): N/A
Flash point: N/A
Lower flammable limit (% by volume): N/Av
Upper flammable limit (% by volume): N/Av

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Evacuate the area and fight the fire from upwind at a safe distance to avoid hazardous dust or decomposition products. Dike and collect fire-extinguishing water to prevent environmental damage and excessive waste runoff.

Firefighting media: Use foam, dry chemical, carbon dioxide, or water fog when fighting fires involving this product. Do not use water jet, as this may spread burning material. Minimize the use of water to avoid environmental contamination. Contain all runoff.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots, and gloves). Use full face shield and operate in positive pressure mode. Avoid contact with this material during firefighting operations. If contact is likely, change to full chemical resistant firefighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

Hazardous Combustion Products: Carbon oxides, nitrogen oxides, halogenated compounds, irritating fumes and smoke.

NFPA:	**Health:**	**Flammability:**	**Reactivity:**
	2	**0**	**0**

(Rating: 4-Extreme, 3-High, 2-Moderate, 1-Slight, 0-Insignificant)

Section 6: Accidental Release Measures

Steps to be taken if Material is Released or Spilled:

- Sweep as much material as possible, keeping dust to a minimum and place in an approved chemical waste container. Wash the spill area with water containing a strong detergent, absorb with earth, sand or absorbent material and sweep up and place in approved chemical waste container. For large spills contact Drexel Chemical Co. See Section 13, Disposal Considerations, for additional information.

Personal Precautions:

- Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to Section 7, Handling, for additional precautionary measures. Ventilate area of spill. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Section 7: Handling and Storage

KEEP OUT OF REACH OF CHILDREN

Handling: **General Handling:** Avoid contact with eyes, skin, and clothing. When using do not eat, drink or smoke. Wash thoroughly after handling. Do not swallow. Avoid breathing dust. Use with adequate ventilation. Wear chemical protective equipment when handling. Keep away from heat, sparks and flame. See Section 8, Exposure Controls and Personal Protection.

Storage: Store in a cool, dry, well ventilated and secure area designated specifically for pesticides and away from heat sources. Keep in original containers and keep containers closed when not in use. Do not store in excessive heat. Do not store near children, food, foodstuffs, drugs or potable water supplies.

Section 8: Exposure Controls / Personal Protection

Exposure Limits: TLV Simazine 5 mg/m^3

Personal Protection:

Eye/Face Protection: Wear dust proof chemical splash goggles to prevent vapors dust and/or mists from entering the eyes. If using a full face shield, always use dust proof safety goggles along with the face shield to ensure adequate protection of the eyes.

Skin Protection: Wear long-sleeved shirt, long pants and rubber boots with socks. Safety shower should be located in immediate work area. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Neoprene, Nitrile/butadiene rubber (“nitrile” or “NBR”) or Polyvinyl chloride (“PVC” or “vinyl”).

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. When handling in enclosed areas, when large quantities of dusts or mists are generated or prolonged exposure is possible in excess of the TLV, use a respirator with either an organic vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C) or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G).

Ingestion: Avoid ingestion of even very small amounts; do not consume or store food or tobacco in the work area; wash hands and face before smoking or eating.

Engineering Controls:

Ventilation: When handling this product proper ventilation is required to maintain exposure below the TLV. Ventilate all transport vehicles prior to unloading. Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower.

Section 9: Physical and Chemical Properties

Physical State:	Dry granule
Color:	Off white to beige
Odor:	Mild
Flash Point:	N/A
Vapor Pressure:	N/A
Boiling Point:	N/A
Vapor Density (air = 1):	N/A
Bulk Density:	28.5 lb/ft^3
Freezing Point:	N/A
Solubility in water (wt. %):	N/A
pH:	6-8 (2% aqueous solution at 25°C)
Viscosity:	N/A
% Volatiles:	N/Av

Section 10: Stability and Reactivity

Stability/Instability: Stable at typical use temperatures and in closed containers.

Conditions to Avoid: Avoid high temperatures above 130°F (54.4°C).

Incompatible Materials: Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

Hazardous Polymerization: Will not occur

Thermal Decomposition: Decomposition products can include and are not limited to: Carbon oxides, nitrogen oxides, ammonia and halogenated compounds.

Section 11: Toxicological Information

Acute toxicity:

Ingestion:

- Oral, LD50, (rat): >2,000 mg/kg

Dermal (rat):

- Dermal, LD50, (rat): >2,000 mg/kg

Inhalation:

- Inhalation, LC50, (rat): >3.55 mg/l

Eye irritation (rabbit):

- Minimally-irritating

Skin irritation (rabbit):

- Causes skin irritation

Sensitization Skin:

- Non-sensitizer (guinea pig)

Carcinogenicity:
- Not likely to cause carcinogenicity in humans

Chronic toxicity:
- **Simazine:** Suspected of causing cancer. IARC Group 3.

Teratogenicity, mutagenicity, and other reproductive effects: None known

Section 12: Ecological Information

The information presented here is for the active ingredient, simazine:

ENVIRONMENTAL FATE:
- This product is practically nontoxic to birds. Slightly toxic to fish, and highly toxic to aquatic invertebrates.

Persistence and Degradability:
- Low bioaccumulation potential. Not persistent in soil. Stable in water. Moderately mobile in soil. Sinks in water (after 24 hr.).

Aquatic Toxicity:
- Trout, LC50/EC50: >10 ppm
- Bluegill, LC50/EC50:16 ppm
- Daphnia Magna Life Cycle MATC: 0.07 mg/L

Arthropod Toxicity:
- Bees, LD50/EC50: >99 µg/bee

Bird Toxicity:
- Bobwhite Quail, (8-day dietary), LC50/EC50: >10,000 ppm
- Mallard Duck, (8-day dietary), LC50/EC50: >10,000 ppm

Section 13: Disposal Considerations

If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

Section 14: Transport Information

DOT classification: Not regulated

IMDG/Water transport – International: UN 3077, Environmentally hazardous substances, solid, n.o.s. (Simazine), 9, PG-III, Marine Pollutant

IATA/Air transport: UN 3077, Environmentally hazardous substances, solid, n.o.s. (Simazine), 9, PG-III

Freight description: Agricultural Herbicide, solid, n.o.s.

ERG Guide No: 171

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

Section 15: Regulatory Information

OSHA Hazard Communication Standard:

- **This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.**
- **EPA FIFRA INFORMATION: This chemical is a pesticide product registered by the United States 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 (SDS), and for workplace labels of non-pesticide chemical. The hazard information required on the pesticide label is listed out below. The pesticide label also includes other important information, including directions for use.**
- **EPA/CERCLA Reportable Quantity:** None known
- **EPA Human Hazard Precautionary Statements: CAUTION:** Harmful if absorbed through skin or inhaled. Avoid contact with skin, clothing, or eyes. Avoid breathing dust. Harmful if swallowed. Causes moderate eye irritation.

SARA/TITLE III:

- **Sec. 302. Extremely Hazardous Substance Notification:** Not applicable.
- **Sec. 311/312. Hazard Categories:** Chronic health hazard
- **Sec. 313. Toxic Chemical(s):** Simazine (90.0%) (CAS No. 122-34-9)
- **RCRA Waste Code:** Not applicable

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986):

- This product is listed.

Toxic Substances Control Act (TSCA):

- All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

Section 16: Other Information

Drexel Chemical Company recommends that each customer or recipient of this SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown below. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions

necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific SDSs, we are not and cannot be responsible for SDSs obtained from any source other than ourselves. If you have obtained an SDS from another source or if you are not sure that the SDS you have is current, please contact us for the most current version.

Date Revised: June 16, 2017 **Supersedes: October 10, 2016**

DuPont™ Escort® XP Herbicide

Version 2.0

Revision Date 06/30/2015 Ref. 130000036195

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	DuPont™ Escort® XP Herbicide
Tradename/Synonym	:	DPX-T6376 60 XP Metsulfuron Methyl 60 XP Escort 60 XP B11495142 METSULFURON METHYL (Methyl 2-[[[[(4-methoxy-6-methyl-1,3,-triazin-2-yl)amino]carbonyl]amino]sulfonyl]benzoate)
Product Use	:	Herbicide
Restrictions on use	:	Do not use product for anything outside of the above specified uses
Manufacturer/Supplier	:	DuPont 4417 Lancaster Pike Wilmington, DE 19805, USA
Product Information	:	1-800-441-7515 (outside the U.S. 1-302-774-1000)
Medical Emergency	:	1-800-441-3637 (outside the U.S. 1-302-774-1139)
Transport Emergency	:	CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION

Not classified as a hazardous substance or mixture according to the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard 2012.

Other hazards

The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity: 37.52 %

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Metsulfuron methyl	74223-64-6	60 %
Modified Aromatic Sulfonate Salt		1 - 5 %
Phosphate Salt		1 - 5 %
Other Ingredients		30 - 38 %

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4. FIRST AID MEASURES

General advice : Have the product container or label with you when calling a poison control center or doctor, or going for treatment.
For medical emergencies involving this product, call toll free 1-800-441-3637.
See Label for Additional Precautions and Directions for Use.

Inhalation : No specific intervention is indicated as the compound is not likely to be hazardous. Consult a physician if necessary.

Skin contact : Take off all contaminated clothing immediately. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

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 poison control center or doctor for treatment advice.

Ingestion	:	No specific intervention is indicated as the compound is not likely to be hazardous. Consult a physician if necessary.
Most important symptoms/effects, acute and delayed	:	No applicable data available.
Protection of first-aiders	:	No applicable data available.
Notes to physician	:	Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Water spray, Dry chemical, Foam, Carbon dioxide (CO2)
Unsuitable extinguishing media	:	High volume water jet, (contamination risk)
Specific hazards	:	No applicable data available.
Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus. Wear full protective equipment.
Further information	:	(on small fires) If area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the area contaminated. Cool containers/tanks with water spray.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Safeguards (Personnel)	:	Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus.
Environmental precautions	:	Prevent material from entering sewers, waterways, or low areas.
Spill Cleanup	:	Sweep up and shovel into suitable containers for disposal. If spill area is on ground near valuable plants or trees, remove 5 cm of top soil after initial clean-up.

Accidental Release Measures : Never return spills in original containers for re-use. Dispose of in accordance with local regulations.

SECTION 7. HANDLING AND STORAGE

Handling (Personnel) : Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

Handling (Physical Aspects) : No applicable data available.
Dust explosion class : No applicable data available.
Storage : Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Store in original container. Store in a cool, dry place. Keep out of the reach of children.

Storage period : No applicable data available.

Storage temperature : No applicable data available.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal protective equipment
Skin and body protection : Applicators and other handlers must wear:
Long sleeved shirt and long pants
Shoes plus socks
PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:
Coveralls
Shoes plus socks

Protective measures : Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Exposure Guidelines
Exposure Limit Values

Metsulfuron methyl				
AEL *	(DUPONT)	10 mg/m3	8 & 12 hr. TWA	Total dust.

Modified Aromatic Sulfonate Salt
No applicable data available.

Phosphate Salt
No applicable data available.

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance		
Physical state	:	solid
Form	:	solid, granular
Color	:	light brown
Odor	:	odourless
Odor threshold	:	No applicable data available.
pH	:	5.0
Melting point/range	:	No applicable data available.
Boiling point/boiling range	:	No applicable data available.
Flash point	:	Not applicable
Evaporation rate	:	No applicable data available.
Flammability (solid, gas)	:	No applicable data available.
Upper explosion limit	:	No applicable data available.
Lower explosion limit	:	No applicable data available.
Vapour Pressure	:	No applicable data available.

Vapour density	:	No applicable data available.
Specific gravity (Relative density)	:	1.47 at 25 °C (77 °F)
Bulk density	:	Tapped
Water solubility	:	dispersible
Solubility(ies)	:	No applicable data available.
Partition coefficient: n-octanol/water	:	No applicable data available.
Auto-ignition temperature	:	No applicable data available.
Decomposition temperature	:	No applicable data available.
Viscosity, kinematic	:	No applicable data available.
Viscosity, dynamic	:	No applicable data available.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No applicable data available.
Chemical stability	:	Stable at normal temperatures and storage conditions.
Possibility of hazardous reactions	:	No applicable data available.
Conditions to avoid	:	None reasonably foreseeable.
Incompatible materials	:	No materials to be especially mentioned.
Hazardous decomposition products	:	No applicable data available.

SECTION 11. TOXICOLOGICAL INFORMATION

DuPont™ Escort® XP Herbicide

Dermal LD50	:	> 5,000 mg/kg , Rat
Oral LD50	:	> 5,000 mg/kg , Rat

Skin irritation	:	No skin irritation, Rabbit
Eye irritation	:	slight irritation, Rabbit
Sensitisation	:	Animal test did not cause sensitization by skin contact., Guinea pig

Metsulfuron methyl

Inhalation 4 h LC50	:	> 5.3 mg/l , Rat
Repeated dose toxicity	:	The following effects occurred at levels of exposure that significantly exceed those expected under labeled usage conditions. Oral Rat - Reduced body weight gain, Organ weight changes, Liver Dermal Rabbit - Skin irritation
Carcinogenicity	:	Not classifiable as a human carcinogen. Did not show carcinogenic effects in animal experiments.
Mutagenicity	:	Animal testing did not show any mutagenic effects. Did not cause genetic damage in cultured bacterial cells. Genetic damage in cultured mammalian cells was observed in some laboratory tests but not in others.
Reproductive toxicity	:	No toxicity to reproduction Animal testing did not show any effects on fertility.
Teratogenicity	:	Animal testing showed no developmental toxicity.

Phosphate Salt

Inhalation	:	Rat An LC50/inhalation/4h/rat could not be determined because no mortality of rats was observed at the maximum achievable concentration. Information given is based on data obtained from similar substances.
Repeated dose toxicity	:	Ingestion

Dog
- 90 d
NOAEL: 322.88 mg/kg
LOAEL: 1,107.12 mg/kg
No toxicological effects warranting significant target organ toxicity classification were seen below the recommended guidance values for classification., Information given is based on data obtained from similar substances.

Mutagenicity : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Evidence suggests this substance does not cause genetic damage in animals.
Information given is based on data obtained from similar substances.

Reproductive toxicity : No toxicity to reproduction
Animal testing showed no reproductive toxicity.
Information given is based on data obtained from similar substances.

Teratogenicity : Animal testing showed no developmental toxicity.
Information given is based on data obtained from similar substances.

Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity
Metsulfuron methyl

96 h LC50 : Oncorhynchus mykiss (rainbow trout) > 150 mg/l

72 h EC50 : Anabaena flos-aquae (cyanobacteria) 0.066 mg/l

14 d EC50 : Lemna minor (common duckweed) 0.00036 mg/l

48 h EC50	:	Daphnia magna (Water flea) > 120 mg/l

Phosphate Salt

96 h LC50	:	Oncorhynchus mykiss (rainbow trout) > 100 mg/l OECD Test Guideline 203 Information given is based on data obtained from similar substances.
72 h ErC50	:	Desmodesmus subspicatus (green algae) > 100 mg/l OECD Test Guideline 201 Information given is based on data obtained from similar substances.
72 h NOEC	:	Desmodesmus subspicatus (green algae) > 100 mg/l OECD Test Guideline 201 Information given is based on data obtained from similar substances.
48 h EC50	:	Daphnia magna (Water flea) > 100 mg/l OECD Test Guideline 202 Information given is based on data obtained from similar substances.

Environmental Fate

DuPont™ Escort® XP Herbicide

Bioaccumulation	:	This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT). This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB).
Additional 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 or rinsate.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods - Product	:	Do not contaminate water, food or feed by disposal. Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.
Waste disposal methods - Container	:	Refer to the product label for instructions. Do not transport if this container is damaged or leaking.

In the event of a major spill, fire or other emergency, call 1-800-441-3637 day or night.

Contaminated packaging : No applicable data available.

SECTION 14. TRANSPORT INFORMATION

IATA_C	UN number	:	3077
	Proper shipping name	:	Environmentally hazardous substance, solid, n.o.s. (Metsulfuron methyl)
	Class	:	9
	Packing group	:	III
	Labelling No.	:	9MI
IMDG	UN number	:	3077
	Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Metsulfuron methyl)
	Class	:	9
	Packing group	:	III
	Labelling No.	:	9
	Marine pollutant	:	yes (Metsulfuron methyl)

Marine Pollutants assigned UN number 3077 and 3082 in single or combination packaging containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass per single or inner packaging of 5 KG or less for solids may be transported as non-dangerous goods as provided in section 2.10.2.7 of IMDG code, IATA special provision A197, and ADR/RID special provision 375.

SECTION 15. REGULATORY INFORMATION

Other regulations : This Safety Data Sheet is for a pesticide product registered by the US Environmental Protection Agency (USEPA) and is therefore also subject to certain labeling requirements under US pesticide law (FIFRA). These requirements differ from the classification criteria and hazard information required by OSHA for safety data sheets, and for workplace labels of non-pesticide chemicals. The following is the mandatory hazard information required by USEPA on the pesticide label:

CAUTION!

		Causes eye irritation. Avoid contact with skin, eyes and clothing. Avoid breathing dust or spray mist.
SARA 313 Regulated Chemical(s)	:	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
PA Right to Know Regulated Chemical(s)	:	Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Sucrose, Phosphate Salt
NJ Right to Know Regulated Chemical(s)	:	Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): Phosphate Salt
Title III hazard classification	:	Acute Health Hazard: Yes Chronic Health Hazard: No Fire: No Reactivity/Physical hazard: No Pressure: No
EPA Reg. No.	:	352-439 In the United States this product is regulated by the US Environmental Protection Agency (EPA) under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read and follow all label directions. This product is excluded from listing requirements under EPA/TSCA.

SECTION 16. OTHER INFORMATION

		NFPA
Health	:	1
Flammability	:	1
Reactivity/Physical hazard	:	0

DuPont™ Escort® XP Herbicide

Version 2.0

Revision Date 06/30/2015 Ref. 130000036195

Revision Date : 06/30/2015

Contact person : DuPont Crop Protection, Wilmington, DE, 19898, Phone: 1-888-638-7668

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a 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 process, unless specified in the text.

Significant change from previous version is denoted with a double bar.

SAFETY DATA SHEET
DOW AGROSCIENCES LLC

Product name: MILESTONE™ VM Herbicide

Issue Date: 05/26/2015
Print Date: 05/26/2015

DOW AGROSCIENCES LLC encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: MILESTONE™ VM Herbicide

Recommended use of the chemical and restrictions on use
Identified uses: End use herbicide product

COMPANY IDENTIFICATION
DOW AGROSCIENCES LLC
9330 ZIONSVILLE RD
INDIANAPOLIS IN 46268-1053
UNITED STATES

Customer Information Number: 800-992-5994
info@dow.com

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: 800-992-5994
Local Emergency Contact: 352-323-3500

2. HAZARDS IDENTIFICATION

Hazard classification
This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Other hazards
no data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CASRN	Concentration
Aminopyralid Triisopropanolamine Salt	566191-89-7	40.6%

Triisopropanolamine	122-20-3	1.5%
Balance	Not available	57.9%

4. FIRST AID MEASURES

Description of first aid measures
General advice: If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.

Skin contact: 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.

Eye contact: Hold eyes 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 eyes. Call a poison control center or doctor for treatment advice.

Ingestion: No emergency medical treatment necessary.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed
Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam.

Unsuitable extinguishing media: no data available

Special hazards arising from the substance or mixture
Hazardous combustion products: Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Nitrogen oxides. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: This material will not burn until the water has evaporated. Residue can burn.

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the “Accidental Release Measures” and the “Ecological Information” sections of this (M)SDS.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Small spills: Absorb with materials such as: Clay. Dirt. Sand. Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Dow AgroSciences for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Keep out of reach of children. Do not swallow. Avoid breathing vapor or mist. Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Wash thoroughly after handling.

Conditions for safe storage: Store in a dry place. Store in original container. Keep container tightly closed when not in use. Do not store near food, foodstuffs, drugs or potable water supplies.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Triisopropanolamine	Dow IHG	TWA	10 mg/m3

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

Exposure controls

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use safety glasses (with side shields).

Skin protection

Hand protection: Chemical protective gloves should not be needed when handling this material. Consistent with general hygienic practice for any material, skin contact should be minimized.

Other protection: No precautions other than clean body-covering clothing should be needed.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator.
The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	Liquid.
Color	Brown
Odor	Mild
Odor Threshold	no data available
pH	7.3 *pH Electrode*
Melting point/range	Not applicable
Freezing point	< -10 °C (< 14 °F)
Boiling point (760 mmHg)	no data available
Flash point	**closed cup** > 100 °C (> 212 °F) *Pensky-Martens Closed Cup ASTM D 93*
Evaporation Rate (Butyl Acetate = 1)	no data available
Flammability (solid, gas)	Not Applicable
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapor Pressure	no data available
Relative Vapor Density (air = 1)	no data available
Relative Density (water = 1)	1.14 at 20 °C (68 °F)
Water solubility	Soluble
Partition coefficient: n-octanol/water	no data available
Auto-ignition temperature	none below 400 degC
Decomposition temperature	No test data available
Dynamic Viscosity	12.2 cP at 20 °C (68 °F) *EPA OPPTS 830.7100 (Viscosity)*
Kinematic Viscosity	no data available
Explosive properties	no data available
Oxidizing properties	no data available

Liquid Density	1.140 g/cm3 at 20 °C (68 °F) *Digital density meter*
Molecular weight	no data available
Surface tension	54.4 mN/m at20 °C (68 °F)

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use.

Chemical stability: Thermally stable at typical use temperatures.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Some components of this product can decompose at elevated temperatures.

Incompatible materials: Avoid contact with: Strong oxidizers.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Hydrogen chloride. Nitrogen oxides.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity
Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

As product:
LD50, Rat, male and female, > 5,000 mg/kg

Acute dermal toxicity
Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product:
LD50, Rat, male and female, > 5,000 mg/kg

Acute inhalation toxicity
No adverse effects are anticipated from single exposure to mist. Based on the available data, respiratory irritation was not observed.

As product:
LC50, Rat, male and female, 4 Hour, dust/mist, > 5.79 mg/l

Skin corrosion/irritation
Essentially nonirritating to skin.

Serious eye damage/eye irritation
Essentially nonirritating to eyes.
Corneal injury is unlikely.

Sensitization
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)
Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Carcinogenicity
For similar active ingredient(s). Aminopyralid. Did not cause cancer in laboratory animals.

Teratogenicity
Did not cause birth defects or any other fetal effects in laboratory animals.

Reproductive toxicity
For similar active ingredient(s). Aminopyralid. In animal studies, did not interfere with reproduction.

Mutagenicity
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Aspiration Hazard
Based on physical properties, not likely to be an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity

Acute toxicity to fish
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

LC50, Oncorhynchus mykiss (rainbow trout), static test, 96 Hour, 360 mg/l, OECD Test Guideline 203 or Equivalent

LC50, Cyprinodon variegatus (sheepshead minnow), static test, 96 Hour, > 100 mg/l

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), static test, 48 Hour, > 460 mg/l

LC50, saltwater mysid Mysidopsis bahia, static test, 96 Hour, > 104 mg/l

Acute toxicity to algae/aquatic plants

ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate inhibition, > 1,000 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to Above Ground Organisms
Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).
Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).

dietary LC50, Colinus virginianus (Bobwhite quail), > 21422mg/kg diet.

oral LD50, Colinus virginianus (Bobwhite quail), > 10,000 ppm

oral LD50, Apis mellifera (bees), > 460micrograms/bee

contact LD50, Apis mellifera (bees), > 460micrograms/bee

Toxicity to soil-dwelling organisms
LC50, Eisenia fetida (earthworms), 14 d, survival, > 10,000 mg/kg

Persistence and degradability

Aminopyralid Triisopropanolamine Salt

Biodegradability: For similar material(s): Aminopyralid. Material is not readily biodegradable according to OECD/EEC guidelines.

Triisopropanolamine

Biodegradability: Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD > 40%). Biodegradation rate may increase in soil and/or water with acclimation. Material is not readily biodegradable according to OECD/EEC guidelines.
10-day Window: Fail
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301F or Equivalent

Theoretical Oxygen Demand: 2.35 mg/mg

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals
Atmospheric half-life: 3 Hour
Method: Estimated.

Balance

Biodegradability: No relevant data found.

Bioaccumulative potential

Aminopyralid Triisopropanolamine Salt

Bioaccumulation: For similar active ingredient(s). Aminopyralid. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Triisopropanolamine

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): -0.015 at 23 °C Measured
Bioconcentration factor (BCF): < 0.57 Fish. 42 d Measured

Balance
Bioaccumulation: No relevant data found.

Mobility in soil

Aminopyralid Triisopropanolamine Salt
For similar active ingredient(s).
Aminopyralid.
Potential for mobility in soil is very high (Koc between 0 and 50).

Triisopropanolamine
Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient(Koc): 10 Estimated.

Balance
No relevant data found.

13. DISPOSAL CONSIDERATIONS

Disposal methods: If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

14. TRANSPORT INFORMATION

DOT
Not regulated for transport

Classification for SEA transport (IMO-IMDG):
Not regulated for transport

Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):
Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

OSHA Hazard Communication Standard
This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312
No SARA Hazards

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)
This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

Pennsylvania (Worker and Community Right-To-KnowAct): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:
The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Components	**CASRN**
Triisopropanolamine	122-20-3

Pennsylvania (Worker and Community Right-To-KnowAct): Pennsylvania Special Hazardous Substances List:
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

United States TSCA Inventory (TSCA)
This product contains chemical substance(s) exempt from U.S. EPA TSCA Inventory requirements. It is regulated as a pesticide subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements.

Federal Insecticide, Fungicide and Rodenticide Act
EPA Registration Number: 62719-537
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

Causes moderate eye irritation

16. OTHER INFORMATION

Hazard Rating System
NFPA

Health	Fire	Reactivity
1	1	0

Revision
Identification Number: 101209315 / A211 / Issue Date: 05/26/2015 / Version: 9.0
DAS Code: GF-871
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

Dow IHG	Dow Industrial Hygiene Guideline
TWA	Time Weighted Average (TWA):

Information Source and References
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW AGROSCIENCES LLC urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

1. IDENTIFICATION

Product name:	**Quali-Pro® Prodiamine 65 WDG**
Chemical name of active ingredient(s):	Prodiamine: 2,4-dinitro-N3,N3-dipropyl-6-(trifluoromethyl)-1,3-benzenenediamine
Distributor	FarmSaver.com, LLC. 4515 Falls of Neuse Road, Suite 300 Raleigh, NC 27609 Phone: 1-800-979-8994
For fire, spill, and/or leak emergencies, contact CHEMTREC:	Phone: 1-800-424-9300 Outside US: 1-703-527-3887
For medical emergencies and health and safety inquiries, contact Prosar:	Phone: 1-800-308-5391

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME	CAS NO.	%	OSHA PEL	ACIGH TLV	OTHER	NTP/IARC/OSHA (Carcinogen)
Prodiamine	29091-21-2	65	Not established	Not established	-	Not applicable

3. HAZARDS IDENTIFICATIONS

PHYSICAL PROPERTIES
Appearance: Yellow granules
Odor: Odorless

EMERGENCY OVERVIEW: CAUTION. Harmful if inhaled or absorbed through the skin. Avoid contact with skin, eyes or clothing. Avoid breathing dust. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

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

UNUSUAL FIRE, EXPLOSION, AND REACTIVITY HAZARDS
This product is considered electrically conductive. Static electricity, mechanical sparks, open flames and certain hot surfaces (greater than 680° F [360° C] can serve as ignition sources for this material. This material can energetically decompose at approximately 383° F (195° C).

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 IN EYES:	• 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 ON SKIN OR CLOTHING:	• 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.
IF INHALED:	• 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 SWALLOWED:	• 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.
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-308-5391for emergency medical treatment information.	

5. FIRE FIGHTING MEASURES

FLASH POINT: Not applicable
METHOD USED: Not applicable
FLAMMABLE LIMITS
LFL: Not applicable
UFL: Not applicable
AUTOIGNITION TEMPERATURE: Not applicable
FLAMMABILITY: Not applicable

EXTINGUISHING MEDIA: Foam, CO_2, dry chemical

UNUSUAL FIRE, EXPLOSION, AND REACTIVITY HAZARDS
This product is considered electrically conductive. Static electricity, mechanical sparks, open flames and certain hot surfaces (greater than 680° F [360° C] can serve as ignition sources for this material. This material can energetically decompose at approximately 383° F (195° C).

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 system or any body of water. Clean up spills immediately, observing precautions outlined in Section 8. 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 clean up and placed in a disposal container, seal container and arrange for disposition.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING: 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.

Bulk bags (FIBC) used to contain this material should be either Type B or Type C. If Type C bags are used, make sure they are electrically grounded before powder is discharged from the bag.

Handle this material only in electrically conductive equipment. Electrically ground and bond this equipment as well as any worker who could contact a dust cloud formed of this material. Eliminate the presence of mechanical sparks and other ignition sources where dust clouds of this material could form.

PRECAUTIONS TO BE TAKEN IN STORAGE: Do not store or process above 320° F (160° C). Store 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.

STORAGE TEMPERATURE (MIN/MAX):
Minimum: Normal ambient temperatures.
Maximum: 320° F (160° C)

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: Yellow granules
ODOR: Odorless
FLASH POINT: Not applicable
pH: 9.36
MELTING POINT: Not available
BOILING POINT: Not applicable
DENSITY: 0.45 g/mL
SOLUBILITY IN H_2O:

Prodiamine: 0.013 ppm @ 77° F (25° C)

VAPOR PRESSURE:

Prodiamine: $<5.6 \times 10^{-6}$ mmHg @ 68° F (20° 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 (FINISHED PRODUCT)

Acute Oral LD50 (Rat): >5,000 mg/kg

Acute Dermal LD50 (Rat): >2,000 mg/kg
Acute Inhalation LC50 (Rat):1.81 mg/L air (4-hours)
Eye Irritation (Rabbit): Mildly Irritating
Dermal Irritation (Rabbit): Practically Non-Irritation (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).

OTHER TOXICITY INFORMATION

None

TOXICITY OF OTHER COMPONENTS

Dispersing Agent: Exposure can result in eye, skin and respiratory tract irritation.

Kaolin Clay: Long-term exposure to high concentrations of this dust may produce x-ray evidence of dust in the lungs. Continued long-term exposure may affect respiratory function in some individuals.

TARGET ORGANS

Active Ingredients:
Prodiamine: Liver, thyroid

Inert Ingredients:
Dispersing Agent: Eye, skin, respiratory tract
Kaolin Clay: Lung

12. ECOLOGICAL INFORMATION

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
Daphnia magna 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

ECO-CHRONIC TOXICITY:

Not available

ENVIRONMENTAL FATE:

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

13. DISPOSAL CONSIDERATIONS

PRODUCT DISPOSAL: Check governmental regulations and local authorities for approved disposal of this material. Dispose in accordance with applicable laws and regulations.

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

14. TRANSPORT INFORMATION

DOT CLASSIFICATION:

Not regulated

B/L Freight Classification: Item: 50320 [Compounds, tree or weed killing (herbicides), NOI, other than poison] Class 60

INTERNATIONAL TRANSPORTATION

IMO (vessel): Environmentally Hazardous Substances, Solid, N.O.S (prodiamine 65%), 9, UN 3077, PG III, Marine pollutant

IATA (air): Not regulated

15. REGULATORY INFORMATION

SARA TITLE III CLASSIFICATION:

Section 302:	Not applicable.
Section 311/312:	Acute health hazard (immediate) Chronic health hazard (delayed) Reactivity hazard
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:	2	2	1	SLIGHT
REACTIVITY:	1	1	2	MODERATE
			3	HIGH
			4	SEVERE

MSDS Date: 10-31-07

The information herein is given in good faith, but no warrant, express or implied, is made. Consult FarmSaver.com, LLC. for further information.

MONSANTO COMPANY

Safety Data Sheet
Commercial Product

1. PRODUCT AND COMPANY IDENTIFICATION

1.1. Product identifier

Ranger PRO® Herbicide

1.1.1. Chemical name
Not applicable.
1.1.2. Synonyms
None.
1.1.3. EPA Reg. No.
524-517

1.2. Product use

Herbicide

1.3. Company

MONSANTO COMPANY, 800 N. Lindbergh Blvd., St. Louis, MO, 63167
Telephone: 800-332-3111, **Fax:** 314-694-5557
E-mail: safety.datasheet@monsanto.com

1.4. 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: +1 (314) 694-4000 (collect calls accepted).

2. HAZARDS IDENTIFICATION

2.1. Classification

OSHA Hazard Communication Standard, 29 CFR 1910.1200 (2012)
Acute toxicity, inhalation - Category 4

2.2. Label elements

2.2.1. Signal word
WARNING!
2.2.2. Hazard pictogram/pictograms

2.2.3. Hazard statement/statements
Harmful if inhaled.
2.2.4. Precautionary statement/statements
Avoid breathing dust/fume/gas/mist/vapours/spray.
Use only outdoors or in a well-ventilated area.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell.

2.3. Appearance and odour (colour/form/odour)
Amber /Liquid / Sweet

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

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

3. 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.

4. FIRST AID MEASURES

Use personal protection recommended in section 8.

4.1. Description of first aid measures
4.1.1. 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. Call a poison control center or doctor for treatment advice. Immediately flush with plenty of water.
4.1.2. Skin contact: 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.
4.1.3. Inhalation: If inhaled, move person to fresh air. If person is not breathing, call emergency number or ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for treatment advice.
4.1.4. Ingestion: Call 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 the poison center or doctor. Do not give anything by mouth to an unconscious person.

4.2. Most important symptoms and effects, both acute and delayed
4.2.1. Eye contact, short term: May cause temporary eye irritation.
4.2.2. Skin contact, short term: Not expected to produce significant adverse effects when recommended use instructions are followed.
4.2.3. Inhalation, short term: Not expected to produce significant adverse effects when recommended use instructions are followed.
4.2.4. Single ingestion: Not expected to produce significant adverse effects when recommended use instructions are followed.

4.3. Indication of any immediate medical attention and special treatment needed

4.3.1. Advice to doctors: This product is not an inhibitor of cholinesterase.
4.3.2. Antidote: Treatment with atropine and oximes is not indicated.

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

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

5.2. Special hazards

5.2.1. Unusual fire and explosion hazards

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

5.2.2. Hazardous products of combustion

Carbon monoxide (CO), phosphorus oxides (PxOy), nitrogen oxides (NOx)

5.3. Fire fighting equipment: Self-contained breathing apparatus. Equipment should be thoroughly decontaminated after use.

5.4. Flash point

Does not flash.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions

Use personal protection recommended in section 8.

6.2. Environmental precautions

SMALL QUANTITIES:
Low environmental hazard.
LARGE QUANTITIES:
Minimise spread.
Keep out of drains, sewers, ditches and water ways.
Notify authorities.

6.3. 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.
Use handling recommendations in Section 7 and personal protection recommendations in Section 8.

7. HANDLING AND STORAGE

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

7.1. Precautions for safe 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. Refer to section 13 of the safety data sheet for disposal of rinse water.

7.2. Conditions for safe storage

Minimum storage temperature: -15 °C
Maximum storage temperature: 50 °C
Compatible materials for storage: stainless steel, 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

8.1. 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.

8.2. Engineering controls: No special requirement when used as recommended.

8.3. Recommendations for personal protective equipment

8.3.1. Eye protection: If there is significant potential for contact: Wear chemical goggles.
8.3.2. Skin protection: No special requirement when used as recommended. If repeated or prolonged contact: Wear chemical resistant gloves.
8.3.3. 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
Odour:	Sweet
Form:	Liquid
Physical form changes (melting, boiling, etc.):	
Melting point:	Not applicable.
Boiling point:	No data.
Flash point:	Does not flash.
Explosive properties:	No data.
Auto ignition temperature:	No data.
Self-accelerating decomposition temperature (SADT):	No data.

Oxidizing properties:	No data.
Specific gravity:	1.162 @ 20 °C / 15.6 °C
Vapour pressure:	No significant volatility.
Vapour density:	Not applicable.
Evaporation rate:	No data.
Dynamic viscosity:	No data.
Kinematic viscosity:	No data.
Density:	1.162 g/cm3 @ 20 °C
Solubility:	Water: Completely miscible.
pH:	4.4 - 5.0
Partition coefficient:	log Pow: < 0.00

10. STABILITY AND REACTIVITY

10.1. Reactivity

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

10.2. Stability

Stable under normal conditions of handling and storage.

10.3. Possibility of hazardous reactions

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

10.4. Incompatible materials

galvanised steel;unlined mild steel;see section 10.;
Compatible materials for storage: see section 7.2.

10.5. Hazardous decomposition

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

11. TOXICOLOGICAL INFORMATION

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

Likely routes of exposure: Skin contact, eye contact

Potential health effects

Eye contact, short term: May cause temporary eye irritation.
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.
Single ingestion: Not expected to produce significant adverse effects when recommended use instructions are followed.

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.

Acute dermal toxicity
Rat, LD50 (limit test): > 5,000 mg/kg body weight
Practically non-toxic. 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.
Eye irritation
Rabbit, 6 animals, OECD 405 test:
Days to heal: 3
Slight irritation.
Acute inhalation toxicity
Rat, LC50, 4 hours, aerosol: 2.9 mg/L
Other effects: weight loss, breathing difficulty
Practically non-toxic.
Skin sensitization
Guinea pig, 3-induction Buehler test:
Positive incidence: 0 %

N-(phosphonomethyl)glycine; { glyphosate acid}

Genotoxicity
Not genotoxic.

Carcinogenicity
Not carcinogenic in rats or mice. Listed as Category 2A by the International Agency for Research on Cancer (IARC) but our expert opinion is that classification as a carcinogen is not warranted.

Reproductive/Developmental Toxicity
Developmental effects in rats and rabbits only in the presence of significant maternal toxicity.
Reproductive effects in rats only in the presence of significant maternal toxicity.

12. ECOLOGICAL INFORMATION

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

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

Similar formulation

Aquatic toxicity, fish
Rainbow trout (Oncorhynchus mykiss):
Acute toxicity, 96 hours, static, LC50: 5.4 mg/L
Moderately toxic.
Aquatic toxicity, invertebrates
Water flea (Daphnia magna):
Acute toxicity, 48 hours, static, EC50: 11 mg/L
Slightly toxic.
Arthropod toxicity
Honey bee (Apis mellifera):
Oral/contact, 48 hours, LD50: > 100 µg/bee
Practically non-toxic.

Similar formulation

Aquatic toxicity, algae/aquatic plants

Green algae (Selenastrum capricornutum):
Acute toxicity, 72 hours, static, EbC50 (biomass): 12.4 mg/L
Slightly toxic.

Green algae (Selenastrum capricornutum):
Acute toxicity, 72 hours, static, NOEC: 6.3 mg/L

N-(phosphonomethyl)glycine; { glyphosate acid}

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

13.1. Waste treatment methods

13.1.1. 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.

13.1.2. Container

See the individual container label for disposal information. Emptied containers retain vapour and product residue. Observe all labeled 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.

Use handling recommendations in Section 7 and personal protection recommendations in Section 8.

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.

14.1. US Dept. of Transportation (DOT) Hazardous Materials Regulations (49 CFR Parts 105-180)

Proper Shipping Name (Technical Name if required):	Not regulated for domestic ground transportation. ()

14.2. IMDG Code

Proper Shipping Name	Not regulated for transport under IMO Regulations ()

(Technical Name if required):	

14.3. IATA/ICAO

Proper Shipping Name (Technical Name if required):	Not regulated for transport under IATA/ICAO Regulations ()

15. REGULATORY INFORMATION

15.1. Environmental Protection Agency

15.1.1. TSCA Inventory

All components are on the US EPA's TSCA Inventory

15.1.2. SARA Title III Rules

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

15.1.3. CERCLA Reportable quantity

Not applicable.

15.1.4. Federal Insecticide, Fungicide, Rodenticide Act (FIFRA)

This chemical is a pesticide product regulated by the United States 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 (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

CAUTION!
CAUSES EYE IRRITATION

Acute oral toxicity: FIFRA category IV.
Acute dermal toxicity: FIFRA category IV.
Acute inhalation toxicity: FIFRA category IV.
Skin irritation: FIFRA category IV.
Eye irritation: FIFRA category III.

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.
|| Significant changes versus previous edition.

	Health	Flammability	Instability	Additional Markings
NFPA	1	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), STOT SE (Specific Target Organ Toxicity, Single Exposure), STOT RE (Specific Target Organ Toxicity, Repeated Exposure),TLV-C (Threshold Limit Value-Ceiling), TLV-TWA (Threshold Limit Value - Time Weighted Average), UEL (Upper Explosion Limit)

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). This SDS 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 or any of its subsidiaries 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 or any of its subsidiaries 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.

000000012797 End of document

MATERIAL SAFETY DATA SHEET

Drexel Chemical Co.
1700 Channel Avenue
Memphis, TN 38113
(901) 774-4370

Emergency Telephone No.

1-800-424-9300 (ChemTrec)

SECTION I – GENERAL INFORMATION

TRADE NAME:	**SIMAZINE 90DF**
CHEMICAL NAME:	2-Chloro-4, 6-bis (Ethylamino)-s-Triazine
CHEMICAL FAMILY:	Triazine (Herbicide)
EPA REG. NO.:	19713-252
SIGNAL WORD:	CAUTION

SECTION II – INGREDIENTS
(Class = H (Hazardous), NH (Non-Hazardous))

NAME	CAS NO.	% (by wt.)	TLV	CLASS
Simazine	122-34-9	90.0	5mg/m³	NH
Inerts	N/A	10.0	N/A	NH

SECTION III – PHYSICAL DATA

Boiling Point:	N/A	Specific Gravity	N/A
Vapor Pressure:	1.5×10^{-8} @ 25°C (Simazine)	% Volatiles:	N/A
Vapor Density:	N/A	Solubility in Water:	dispersible
pH (@ 5%):	6-8	Appearance/Odor:	Off-white to beige granule solid, slight odor

SECTION IV – FIRE & EXPLOSION DATA

Flash Point:	NA
Extinguishing Media:	Dry chemical, CO_2, water spray or foam
Fire Fighting Procedures:	In confined areas use self-contained breathing apparatus. Fight fire from upwind. Minimize runoff if possible.

SECTION V – REACTIVITY DATA

Stability:	Stable
Conditions to Avoid:	N.K.
Incompatibility:	Acids and alkalies
Hazardous Decomposition Products:	Toxic Oxides of Nitrogen and Carbon. Chloride fumes.
Hazardous Polymerization:	Will not occur

SECTION VI – HEALTH HAZARD DATA

Carcinogenicity:	N/A
Toxicity Data:	Oral LD50 (Rat) = >5,000 mg/kg Dermal LD50 (Rabbit) = >10,200 mg/kg
TLV:	None established
N.F.P.A.:	Health: 2, Fire: 0, Reactivity: 0
	(Rating: 4-Extreme, 3-High, 2-Moderate, 1-Slight, 0-Insignificant)
Effects of Overexposure:	Irritation to eyes, skin, and upper respiratory tract. Moderately toxic by ingestion.

SECTION VII – EMERGENCY PROCEDURES

If on Skin or Clothing: 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 Swallowed: 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 or convulsing person.

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.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For information on this pesticide product (including health concerns, medical emergencies or pesticide incidents), call the National Pesticide Information Center at 1-800-858-7378.

SECTION VIII- SPILL OR LEAK PROCEDURES

Steps to be taken in case of material leak or spill

Sweep up spills and place in proper containers. Mop area with soap and water. Prevent run-off if possible. Assure protective clothing is worn.

Waste Disposal Method

Dispose of in accordance with Local, State, and Federal Regulations.

SECTION IX – SPECIAL PROTECTION INFORMATION

Respiratory Protection:	NIOSH approved respirator or dust mask.
Ventilation:	General recommended
Protective Gloves:	Rubber impervious
Eye Protection:	Chemical goggles
Other:	Coverall, long-sleeve shirt, rubber boots

SECTION X – SPECIAL PRECAUTIONS

Precautions To Be Taken In Handling & Storage

KEEP OUT OF REACH OF CHILDREN. FOLLOW LABEL DIRECTIONS CAREFULLY.

Store away from foodstuffs.

D.O.T. Description:	Non-Regulated
Freight Description:	Agricultural Herbicide, Solid, N.O.S.
Reportable Quantity:	N/A
E.R.G. Guide Sheet:	171

Date Reviewed: 1-28-2013

Vegetation Management LLC
2901-12 Rivendell
Knoxville, TN 37922
206-812-8647
800-979-8994

"For Chemical Emergency"
Spill, Leak, Fire, Exposure or Accident, Call:
Chemtrec (24 Hours): (800) 424-9300
Outside U.S., call collect: (703) 527-3887

MATERIAL SAFETY DATA SHEET

SECTION 1 - PRODUCT IDENTIFICATION

PRODUCT NAME:	CHEMICAL FORMULA:
Vegetation Manager Oryzalin 4 Pro	**Oryzalin: 3,5-DinitroN4, N4-dipropyl-sulfanilamide**

SECTION 2 - HAZARDOUS INGREDIENT INFORMATION

Section 313 of SARA Title III: Ingredients subject to reporting are identified by asterisk (*)

CAS NO.	COMPONENT	%	ACGIH TLV	OSHA PEL	OTHER
019044-88-3	**Oryzalin**	**41**	**N/A**	**N/A**	**N/A**
	Inert Ingredients	**59**			

SECTION 3 - PHYSICAL PROPERTIES

BOILING POINT:	MELTING POINT:	SPECIFIC GRAVITY (H_2O=1)	VAPOR PRESSURE (mmHg)
212 F	**N/A**	**1.138 – 1.239 @ 25C (77F)**	**23 mmHg @ 25 C**

VAPOR DENSITY (AIR=1):	% SOLUBILITY IN WATER:	% VOLATILE BY WEIGHT:
1.178	**Miscible in water**	**NE**

APPEARANCE:	ODOR:	EVAPORATION RATE (Butyl Acetate=1)
Bright orange opaque liquid	**Slight aromatic odor**	**<1**

SECTION 4 - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT & METHOD:	FLAMMABLE LIMITS IN AIR - LEL: UEL:
No Ignition up to 200F (93.3 C) SCC	**Water based product**

EXTINGUISHING MEDIA:
Water based product, will not burn

SPECIAL FIRE FIGHTING PROCEDURES: If product is involved in a fire, wear positive-pressure, self-contained breathing apparatus and full protective clothing

UNUSUAL FIRE AND EXPLOSION HAZARDS: If the water in the product has evaporated, the explosion potential of oryzalin as airborne dust is rated as severe. The minimum ignition temperature for a dust cloud is 714 ^{o}F (379 ^{o}C).

SECTION 5 - REACTIVITY DATA

STABILITY: Stable under normal conditions. If water in the mixture evaporates, however, the resultant mixture should be handled with care.

HAZARDOUS POLYMERIZATION: N/A

HAZARDOUS DECOMPOSITION PRODUCTS: Nitrogen oxides and other toxic gases may be formed if product is involved in a fire.

CONDITIONS & MATERIALS TO AVOID:
NONE

SECTION 6 - PROTECTIVE EQUIPMENT & EXPOSURE CONTROL METHODS

RESPIRATORY PROTECTION:
Atmospheric levels should be maintained below the exposure guidelines. For most conditions, no respiratory protection should be needed; however, if handling at elevated temperatures without sufficient ventilation, use NIOSH approved air-purifying respirator.

	LOCAL EXHAUST:	MECHANICAL:	SPECIAL:	OTHER:
VENTILATION	**ADEQUATE**	**ACCEPTABLE**	**NONE**	**NONE**

PROTECTIVE GLOVES:	EYE PROTECTION:
Chemical resistant gloves	**Use safety glasses**
OTHER PROTECTIVE CLOTHING OR EQUIPMENT:	WORK/HYGIENIC PRACTICES:
Long sleeved shirt and long pants; shoes plus socks	**AVOID SKIN AND EYE CONTACT**

SECTION 7 - HEALTH HAZARDS

PRIMARY ROUTES OF ENTRY:

SKIN AND EYES

CARCINOGEN:	NTP:	IARC MONOGRAPHS:	OSHA:
NONE KNOWN	**N/A**	**N/A**	**N/A**

INHALATION:

At room temperature, exposure to vapors are minimal due to physical properties.

EYE CONTACT:

May cause slight transient eye irritation. Corneal injury is unlikely.

SKIN CONTACT:

Prolonged exposure may cause some skin irritation.

INGESTION:

Single dose toxicity is low. The oral LD50 for rats is 5000 mg/kg

SECTION 8 - EMERGENCY & FIRST AID PROCEDURES

EYE CONTACT:

IMMEDIATELY FLUSH EYES WITH WATER FOR AT LEAST 15 MINS.

SKIN CONTACT:

Wash off in flowing water or shower.

INHALATION:

Remove to fresh air if effects occur. Consult a physician.

INGESTION:

If swallowed seek medical attention. DO NOT induce vomiting unless directed to do so by medical personnel.

SECTION 9 - SPILL, LEAK & DISPOSAL INFORMATION

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Use absorbent material to contain and clean up small spills. Scoop up and dispose as waste in approved disposal facility. Prevent runoff. DISPOSE OF IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS.

WASTE DISPOSAL METHOD:

DISPOSE OF IN APPROVED WASTE DISPOSAL FACILITY IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION 10 - SHIPPING DATA

DOT SHIPPING NAME:

NONE

SECTION 11 - SPECIAL PRECAUTIONS & OTHER INFORMATION

SPECIAL INSTRUCTIONS:

OTHER INFORMATION/PRECAUTIONS:

Read and follow all label instructions before use. Avoid contaminating water. Do not reuse containers. Open dumping is prohibited.

COMMON ABBREVIATIONS THAT MAY HAVE BEEN USED: N/A = NOT APPLICABLE N/E = NOT ESTABLISHED

DATE: *03/14/02*