

# CleanStart<sup>®</sup>

## Co-Pack

- Aim<sup>®</sup> EC Herbicide (PCP No 28573)
- Credit<sup>®</sup> Liquid Herbicide (PCP No 25866)



**Nufarm**

Grow a better tomorrow.

**SAFETY DATA SHEET**  
**AIM® EC HERBICIDE**

**SDS # :** 6165-A  
**Revision date:** 2019-05-01  
**Format:** NA  
**Version** 1.07



**1. PRODUCT AND COMPANY IDENTIFICATION**

**Product Identifier**

**Product Name** AIM® EC HERBICIDE

**Other means of identification**

**Product Code(s)** 6165-A

**Synonyms** CARFENTRAZONE-ETHYL (FMC 116426): ethyl  $\alpha$ ,2-dichloro-5-[4-(difluoromethyl)-4,5-dihydro-3-methyl-5-oxo-1H-1,2,4-triazol-1-yl]-4-fluorobenzenepropanoate (CAS name); ethyl (RS)-2-chloro-3-[2-chloro-5-(4-difluoromethyl-4,5-dihydro-3-methyl-5-oxo-1H-1,2,4-triazol-1-yl)-4-fluorophenyl] propionate (IUPAC name)

**Active Ingredient(s)** Carfentrazone-ethyl

**Chemical Family** Triazolinones

**PCP #** 28573

**Recommended use of the chemical and restrictions on use**

**Recommended Use:** Herbicide

**Restrictions on Use:** Use as recommended by the label.

**Supplier Address**

FMC Corporation  
2929 Walnut Street  
Philadelphia, PA 19104  
(215) 299-6000 (General Information)  
msdsinfo@fmc.com (E-Mail General Information)

**Emergency telephone number**

Medical Emergencies :  
1 800 / 331-3148 (U.S.A. & Canada)  
1 651 / 632-6793 (All Other Countries - Collect)

For leak, fire, spill or accident emergencies, call:  
1 800 / 424-9300 (CHEMTREC - U.S.A.)  
1 703 / 741-5970 (CHEMTREC - International)  
1 703 / 527-3887 (CHEMTREC - Alternate)

**2. HAZARDS IDENTIFICATION**

**Classification**

**OSHA Regulatory Status**

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

Carcinogenicity	Category 2
Aspiration toxicity	Category 1

**GHS Label elements, including precautionary statements****EMERGENCY OVERVIEW****Danger****Hazard Statements**

H304 - May be fatal if swallowed and enters airways

H351 - Suspected of causing cancer

**Precautionary Statements - Prevention**

P201 - Obtain special instructions before use

P202 - Do not handle until all safety precautions have been read and understood

P280 - Wear protective gloves/protective clothing/eye protection/face protection

**Precautionary Statements - Response**

P308 + P313 - If exposed or concerned: Get medical advice/attention

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor

P331 - Do NOT induce vomiting

**Precautionary Statements - Storage**

P405 - Store locked up

**Precautionary Statements - Disposal**

P501 - Dispose of contents/container according to label directions

**Hazards not otherwise classified (HNOC)**

No hazards not otherwise classified were identified.

**Other Information**

May be harmful if swallowed. Very toxic to aquatic life with long lasting effects.

**3. COMPOSITION/INFORMATION ON INGREDIENTS****Chemical Family** Triazolinones.

Chemical name	CAS-No	Weight %
Naphtha (petroleum), heavy aromatic	64742-94-5	<70
2-Methylnaphthalene*	91-57-6	<30
Carfentrazone-ethyl	128639-02-1	21.9
1-Methylnaphthalene*	90-12-0	<20
n-Butanol	71-36-3	1-5
Naphthalene*	91-20-3	0.1-1

\* This component is a constituent(s) of the ingredient: Naphtha (petroleum), heavy aromatic.  
Synonyms are provided in Section 1.

**4. FIRST AID MEASURES****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. Call a poison control center or doctor for further treatment advice.

<b>Skin Contact</b>	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for further treatment advice.
<b>Inhalation</b>	Move to fresh air. If person is not breathing, contact emergency medical services, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.
<b>Ingestion</b>	Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.
<b>Most important symptoms and effects, both acute and delayed</b>	Central nervous system effects. Gastrointestinal effects.
<b>Indication of immediate medical attention and special treatment needed, if necessary</b>	Treatment is symptomatic and supportive. Contains petroleum distillate. Vomiting may cause aspiration pneumonia.

**5. FIRE-FIGHTING MEASURES**

<b>Suitable Extinguishing Media</b>	Water spray. Carbon dioxide (CO <sub>2</sub> ). Foam. Dry powder.
<b>Specific Hazards Arising from the Chemical</b>	Slightly combustible. May support combustion at elevated temperatures.
<b>Explosion data</b>	
<b>Sensitivity to Mechanical Impact</b>	No information available.
<b>Sensitivity to Static Discharge</b>	No information available.
<b>Protective equipment and precautions for firefighters</b>	As in any fire, wear self-contained breathing apparatus and full protective gear. Isolate fire area. Evaluate upwind.

**6. ACCIDENTAL RELEASE MEASURES**

<b>Personal Precautions</b>	Isolate and post spill area. Remove all sources of ignition. Wear suitable protective clothing, gloves and eye/face protection. For personal protection see section 8.
<b>Other</b>	For further clean-up instructions, call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.
<b>Environmental Precautions</b>	Keep people and animals away from and upwind of spill/leak. Keep material out of lakes, streams, ponds, and sewer drains.
<b>Methods for Containment</b>	Dike to prevent runoff. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
<b>Methods for cleaning up</b>	Clean and neutralize spill area, tools and equipment by washing with water and soap. Absorb rinsate and add to the collected waste. Waste must be classified and labeled prior to recycling or disposal. Dispose of waste as indicated in Section 13.

**7. HANDLING AND STORAGE**

<b>Handling</b>	Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal.
<b>Storage</b>	Keep in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Keep out of reach of children and animals. Keep/store only in original container.
<b>Incompatible products</b>	Strong oxidizing agents

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control parameters**

Chemical name	ACGIH TLV	OSHA PEL	NIOSH	Mexico
2-Methylnaphthalene* (91-57-6)	TWA: 0.5 ppm	-	-	Mexico: TWA 0.5 ppm
Carfentrazone-ethyl (128639-02-1)	TWA: 1 mg/m <sup>3</sup>	-	-	-
1-Methylnaphthalene* (90-12-0)	TWA: 0.5 ppm	-	-	Mexico: TWA 0.5 ppm
n-Butanol (71-36-3)	TWA: 20 ppm	TWA: 100 ppm TWA: 300 mg/m <sup>3</sup>	IDLH: 1400 ppm Ceiling: 50 ppm Ceiling: 150 mg/m <sup>3</sup>	Mexico: TWA 20 ppm
Naphthalene* (91-20-3)	TWA: 10 ppm	TWA: 10 ppm TWA: 50 mg/m <sup>3</sup>	IDLH: 250 ppm TWA: 10 ppm TWA: 50 mg/m <sup>3</sup> STEL: 15 ppm STEL: 75 mg/m <sup>3</sup>	Mexico: TWA 10 ppm Mexico: TWA 50 mg/m <sup>3</sup> Mexico: STEL 15 ppm
Chemical name	British Columbia	Quebec	Ontario TWAEV	Alberta
2-Methylnaphthalene* (91-57-6)	TWA: 0.5 ppm Skin	-	TWA: 0.5 ppm  Skin	-
1-Methylnaphthalene* (90-12-0)	TWA: 0.5 ppm Skin	-	TWA: 0.5 ppm  Skin	-
n-Butanol (71-36-3)	TWA: 15 ppm Ceiling: 30 ppm	Ceiling: 50 ppm Ceiling: 152 mg/m <sup>3</sup> Skin	TWA: 20 ppm	TWA: 20 ppm TWA: 60 mg/m <sup>3</sup>
Naphthalene* (91-20-3)	TWA: 10 ppm Skin	TWA: 10 ppm TWA: 52 mg/m <sup>3</sup> STEL: 15 ppm STEL: 79 mg/m <sup>3</sup>	TWA: 10 ppm  Skin	TWA: 10 ppm TWA: 52 mg/m <sup>3</sup> STEL: 15 ppm STEL: 79 mg/m <sup>3</sup> Skin

**Legend**

Skin (S\*) - Skin Absorber

**Appropriate engineering controls****Engineering measures**

Apply technical measures to comply with the occupational exposure limits. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.

**Individual protection measures, such as personal protective equipment****Eye/Face Protection**

For dust, splash, mist or spray exposure, wear chemical protective goggles.

**Skin and Body Protection**

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

**Hand Protection**

Protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion and the contact time.

**Respiratory Protection**

For dust, splash, mist or spray exposures, wear a filtering mask.

**Hygiene measures**

Clean water should be available for washing in case of eye or skin contamination. Wash skin prior to eating, drinking, chewing gum or using tobacco. Shower or bathe at the end of working. Remove and wash contaminated clothing before re-use. Launder work clothing separately from regular household laundry.

**General information** If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Appearance</b>	Liquid
<b>Physical State</b>	Liquid
<b>Color</b>	Brown orange
<b>Odor</b>	Aromatic
<b>Odor threshold</b>	No information available
<b>pH</b>	5.3 (1% solution)
<b>Melting point/freezing point</b>	Not applicable
<b>Boiling Point/Range</b>	No information available
<b>Flash point</b>	75.6 °C / 168.08 °F Closed cup
<b>Evaporation Rate</b>	No information available
<b>Flammability (solid, gas)</b>	No information available
<b>Flammability Limit in Air</b>	
<b>Upper flammability limit:</b>	No information available
<b>Lower flammability limit:</b>	No information available
<b>Vapor pressure</b>	No information available
<b>Vapor density</b>	No information available
<b>Relative density</b>	9.0 lb/gal
<b>Specific gravity</b>	1.08
<b>Water solubility</b>	No information available
<b>Solubility in other solvents</b>	No information available
<b>Partition coefficient</b>	No information available
<b>Autoignition temperature</b>	No information available
<b>Decomposition temperature</b>	No information available
<b>Viscosity, kinematic</b>	No information available
<b>Viscosity, dynamic</b>	No information available
<b>Explosive properties</b>	No information available
<b>Oxidizing properties</b>	No information available
<b>Molecular weight</b>	No information available
<b>Bulk density</b>	No information available

## 10. STABILITY AND REACTIVITY

<b>Reactivity</b>	None under normal use conditions
<b>Chemical Stability</b>	Stable under recommended storage conditions.
<b>Possibility of Hazardous Reactions</b>	None under normal processing.
<b>Hazardous polymerization</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	Heat, flames and sparks
<b>Incompatible materials</b>	Strong oxidizing agents.
<b>Hazardous Decomposition Products</b>	Carbon monoxide (CO). Carbon dioxide (CO <sub>2</sub> ). Hydrogen chloride. Hydrogen fluoride. Nitrogen oxides (NO <sub>x</sub> ). Sulfur oxides.

## 11. TOXICOLOGICAL INFORMATION

### Product Information

<b>LD50 Oral</b>	4077 mg/kg (rat)
<b>LD50 Dermal</b>	> 4000 mg/kg (rat)
<b>LC50 Inhalation</b>	> 6.31 mg/L 4 hr (rat)
<b>Serious eye damage/eye irritation</b>	Mildly irritating.
<b>Skin corrosion/irritation</b>	Mildly irritating (rabbit).
<b>Sensitization</b>	Non-sensitizing

Chemical name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Naphtha (petroleum), heavy aromatic (64742-94-5)	300-2000 mg/kg	> 2 mL/kg ( Rabbit )	>5,2 mg/L
2-Methylnaphthalene* (91-57-6)	= 1630 mg/kg ( Rat )		
1-Methylnaphthalene* (90-12-0)	= 1840 mg/kg ( Rat )		
n-Butanol (71-36-3)	= 700 mg/kg ( Rat ) = 790 mg/kg ( Rat )	= 3400 mg/kg ( Rabbit ) = 3402 mg/kg ( Rabbit )	> 8000 ppm ( Rat ) 4 h
Naphthalene* (91-20-3)	= 1110 mg/kg ( Rat ) = 490 mg/kg ( Rat )	= 1120 mg/kg ( Rabbit ) > 20 g/kg ( Rabbit )	> 340 mg/m <sup>3</sup> ( Rat ) 1 h

**Information on toxicological effects**

**Symptoms** Signs of toxicity in laboratory animals included mydriasis, cyanosis, ataxia, dyspnea, lacrimation, and diarrhea.

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

**Chronic toxicity** Long-term exposure caused neurotoxicity (body tremors, decreased motor activity), decreased body weight and increased liver and spleen weight.

**Mutagenicity** Carfentrazone-ethyl : Not genotoxic in laboratory studies.

**Carcinogenicity** Carfentrazone-ethyl : No evidence of carcinogenicity from animal studies. There was no evidence of carcinogenic activity of naphthalene in male mice, but there was some evidence of carcinogenic activity in female mice and clear evidence of carcinogenic activity in male and female rats in 2-year inhalation studies conducted by the National Toxicology Program (NTP).

**Neurological effects** Carfentrazone-ethyl : Not neurotoxic.

**Reproductive toxicity** Carfentrazone-ethyl : No toxicity to reproduction in animal studies.

**Developmental toxicity** Carfentrazone-ethyl : Not teratogenic in animal studies.

**STOT - single exposure** Not classified.

**STOT - repeated exposure** Not classified.

**Neurological effects** Carfentrazone-ethyl : Not neurotoxic.

**Aspiration hazard** Potential for aspiration if swallowed. Vomiting after ingestion of this product may cause aspiration of aromatic hydrocarbons into the lungs, which may result in fatal pulmonary edema.

Chemical name	ACGIH	IARC	NTP	OSHA
Naphthalene* 91-20-3	A3	Group 2B	Reasonably Anticipated	X

**Legend:**

- ACGIH (American Conference of Governmental Industrial Hygienists)
- A3 - Animal Carcinogen
- IARC (International Agency for Research on Cancer)
- Group 2B - Possibly Carcinogenic to Humans
- NTP (National Toxicology Program)
- Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen
- OSHA (Occupational Safety and Health Administration of the US Department of Labor)
- X - Present

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

Carfentrazone-ethyl (128639-02-1)				
Active Ingredient(s)	Duration	Species	Value	Units
	72 h EC50	Algae	0.012	mg/L
	96 h LC50	Fish	1.6	mg/L
	48 h LC50	Daphnia	>9.8	mg/L
	96 h NOEC	Algae	1.0	µg/L
	21 d NOEC	Fish	0.0187	mg/L
	21 d NOEC	Crustacea	0.22	mg/L

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Naphtha (petroleum), heavy aromatic 64742-94-5	72 h EC50: = 2,5 mg/L (Skeletonema costatum)	96 h LC50: = 1740 mg/L (Lepomis macrochirus) static 96 h LC50: = 19 mg/L (Pimephales promelas) static 96 h LC50: = 2,34 mg/L (Oncorhynchus mykiss) 96 h LC50: = 41 mg/L (Pimephales promelas) 96 h LC50: = 45 mg/L (Pimephales promelas) flow-through	48 h EC50: = 0,95 mg/L (Daphnia magna)
n-Butanol 71-36-3	72 h EC50: > 500 mg/L (Desmodesmus subspicatus) 96 h EC50: > 500 mg/L (Desmodesmus subspicatus)	96 h LC50: 100000 - 500000 µg/L (Lepomis macrochirus) static 96 h LC50: 1730 - 1910 mg/L (Pimephales promelas) static 96 h LC50: = 1740 mg/L (Pimephales promelas) flow-through 96 h LC50: = 1910000 µg/L (Pimephales promelas) static	48 h EC50: 1897 - 2072 mg/L (Daphnia magna) Static 48 h EC50: = 1983 mg/L (Daphnia magna)
Naphthalene* 91-20-3	72 h EC50: = 0.4 mg/L (Skeletonema costatum)	96 h LC50: 0.91 - 2.82 mg/L (Oncorhynchus mykiss) static 96 h LC50: 5.74 - 6.44 mg/L (Pimephales promelas) flow-through 96 h LC50: = 1.6 mg/L (Oncorhynchus mykiss) flow-through 96 h LC50: = 1.99 mg/L (Pimephales promelas) static 96 h LC50: = 31.0265 mg/L (Lepomis macrochirus) static	48 h EC50: 1.09 - 3.4 mg/L (Daphnia magna) Static 48 h EC50: = 1.96 mg/L (Daphnia magna) Flow through 48 h LC50: = 2.16 mg/L (Daphnia magna)

**Persistence and degradability** Carfentrazone-ethyl : Non-persistent. Readily hydrolyzed. Not readily biodegradable.

**Bioaccumulation** Carfentrazone-ethyl : The substance does not have a potential for bioconcentration.

**Mobility** Carfentrazone-ethyl : Mobility in soil: Not relevant.

**13. DISPOSAL CONSIDERATIONS**

**Waste disposal methods** Improper disposal of excess pesticide, spray mixture, or rinsate is prohibited. If these wastes cannot be disposed of by use according to label instructions, contact appropriate disposal authorities for guidance. Proper personal protective equipment, as described in Sections 7 and 8, must be worn while handling materials for waste disposal.

**Contaminated Packaging** Containers must be disposed of in accordance with local, state and federal regulations. Refer to the product label for container disposal instructions. Do not reuse or refill this container.

**14. TRANSPORT INFORMATION**

**DOT** Not regulated for transportation if shipped in Non Bulk packaging. The classification below pertains to the shipment in Bulk packaging.

**UN/ID no** UN3082  
**Proper Shipping Name** Environmentally hazardous substance, liquid, n.o.s. (Carfentrazone-ethyl)  
**Hazard class** 9



**AIM® EC HERBICIDE**

**SDS # :** 6165-A  
**Revision date:** 2019-05-01  
**Version** 1.07

**Packing Group** III  
**Reportable Quantity (RQ)** Naphthalene (100 lb)  
**Marine Pollutant** Carfentrazone-ethyl .  
**Description** UN3082, Environmentally hazardous substance, liquid, n.o.s. (Carfentrazone-ethyl), 9, III

**TDG**

Classification below is only applicable when shipped by vessel and is not applicable when shipped by road or rail only.

**UN/ID no** UN3082  
**Proper Shipping Name** Environmentally hazardous substance, liquid, n.o.s. (Carfentrazone-ethyl)  
**Hazard class** 9  
**Packing Group** III  
**Marine Pollutant** Carfentrazone-ethyl .  
**Description** UN3082, Environmentally hazardous substance, liquid, n.o.s. (Carfentrazone-ethyl), 9, III, Marine Pollutant

**ICAO/IATA**

**UN/ID no** UN3082  
**Proper Shipping Name** Environmentally hazardous substance, liquid, n.o.s. (Carfentrazone-ethyl)  
**Hazard class** 9  
**Packing Group** III  
**Description** UN3082, Environmentally hazardous substance, liquid, n.o.s. (Carfentrazone-ethyl), 9, III, Marine Pollutant

**IMDG/IMO**

**UN/ID no** UN3082  
**Proper Shipping Name** Environmentally hazardous substance, liquid, n.o.s. (Carfentrazone-ethyl)  
**Hazard class** 9  
**Packing Group** III  
**EmS No.** F-A, S-F  
**Marine Pollutant** Carfentrazone-ethyl  
**Description** UN3082, Environmentally hazardous substance, liquid, n.o.s. (Carfentrazone-ethyl), 9, III, Marine Pollutant

**15. REGULATORY INFORMATION**

**U.S. Federal Regulations**

**SARA 313**

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

Chemical name	CAS-No	Weight %	SARA 313 - Threshold Values %
n-Butanol - 71-36-3	71-36-3	1-5	1.0
Naphthalene* - 91-20-3	91-20-3	0.1-1	0.1

**SARA 311/312 Hazard Categories**

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

**Clean Water Act**

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

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Naphthalene*	100 lb	X	X	X

91-20-3			
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**CERCLA**

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

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
n-Butanol 71-36-3	5000 lb 2270 kg	
Naphthalene* 91-20-3	100 lb 45.4 kg	

**FIFRA Information**

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

**CAUTION**

Harmful if swallowed, absorbed through the skin or inhaled. Causes moderate eye irritation.  
 Carfentrazone-ethyl is very toxic to algae and moderately toxic to fish.

**US State Regulations**

**California Proposition 65**

This product contains the following Proposition 65 chemicals.

Chemical name	California Prop. 65
Naphthalene* - 91-20-3	Carcinogen

**U.S. State Right-to-Know Regulations**

Chemical name	New Jersey	Massachusetts	Pennsylvania
2-Methylnaphthalene* 91-57-6	X		
1-Methylnaphthalene* 90-12-0	X	X	X
n-Butanol 71-36-3	X	X	X
Naphthalene* 91-20-3	X	X	X

**International Inventories**

Chemical name	TSCA (United States)	DSL (Canada)	EINECS/ELINCS (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)
Naphtha (petroleum), heavy aromatic 64742-94-5	X	X	X		X	X	X	X
2-Methylnaphthalene* 91-57-6	X	X	X	X	X		X	X
Carfentrazone-ethyl 128639-02-1					X			
1-Methylnaphthalene* 90-12-0	X	X	X	X	X		X	X
n-Butanol 71-36-3	X	X	X	X	X	X	X	X

Naphthalene* 91-20-3	X	X	X	X	X	X	X	X
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Mexico - Grade Serious risk, Grade 3

Chemical name	Carcinogen Status	Mexico
2-Methylnaphthalene*		Mexico: TWA 0.5 ppm
1-Methylnaphthalene*		Mexico: TWA 0.5 ppm
n-Butanol		Mexico: TWA 20 ppm
Naphthalene*		Mexico: TWA 10 ppm Mexico: TWA 50 mg/m <sup>3</sup> Mexico: STEL 15 ppm

CANADA

**WHMIS Statement**

This product has been classified in accordance with the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

WHMIS Hazard Class B3 - Combustible liquid  
 D2A - Very toxic materials



**16. OTHER INFORMATION**

NFPA	Health Hazards 1	Flammability 2	Instability 0	Special Hazards -
HMIS	Health Hazards 1*	Flammability 2	Physical hazard 0	Personal Protection X

\*Indicates a chronic health hazard.

NFPA/HMIS Ratings Legend Severe = 4; Serious = 3; Moderate = 2; Slight = 1; Minimal = 0

Revision date: 2019-05-01  
 Reason for revision: SDS sections updated

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Prepared By:

FMC Corporation

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**End of Safety Data Sheet**



## Nufarm Credit Liquid Herbicide Safety Data Sheet

Issue Date: 2017-12-29

Supersedes Date: 2017-05-17

{Reserved}

### 1. Identification

**Product Name:** Nufarm Credit Liquid Herbicide

**PCP Registration No.:** 25866

Refer to the approved product label for handling and use instructions.

**Product Type:** Herbicide

**Supplier:** Nufarm Agriculture Inc.  
Suite 350, 2618 Hopewell Place NE  
Calgary, Alberta, T1Y 7J7, Canada  
1-800-868-5444

**Telephone Numbers:** 24 Hour Emergency Response Number, Chemtrec, 1-800-424-9300.  
For medical emergencies, ProPharma Group, 1-877-325-1840.  
For product and use information, Nufarm Agriculture Inc.,  
1-800-868-5444.

### 2. Hazard Identification

Classified according to UN GHS Version 5.

**Physical Hazards:**

None

**Health Hazards:**

Acute toxicity (Inhalation) Category 4  
Eye irritation Category 2B

**Environmental Hazards:**

Hazardous to aquatic environment, acute Category 2

**Signal Word:**

WARNING

**Hazard Statements:**

Harmful if inhaled. Causes eye irritation. Toxic to aquatic life.



**Precautionary Statements:**

Avoid contact with skin, eyes and clothing. Wear goggles or face shield during mixing/loading. Wear a long-sleeved shirt, long pants, socks, shoes and chemical-resistant gloves. Rinse gloves

# Nufarm Credit Liquid Herbicide Safety Data Sheet

Issue Date: 2017-12-29

Supersedes Date: 2017-05-17

{Reserved}

before removal. After use, wash hands and other exposed skin. Remove and wash contaminated clothing before reuse. Avoid breathing spray mist. Use only outdoors or in a well-ventilated area.

### 3. Composition / Information on Ingredients

Hazardous Components	CAS No.	Wt. %
glyphosate-isopropylammonium	38641-94-0	39.7-42.2
Chemical Synonyms: glyphosate IPA salt; N-(phosphonomethyl)glycine isopropylamine salt		

Other ingredients are considered non-hazardous.

### Content as Expressed on Product Label

Glyphosate, present as isopropylamine salt ... 356 g a.e./L

### 4. First Aid Measures

**If swallowed**, call a poison control centre 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 centre or doctor. Do not give anything by mouth to an unconscious person.

**If on skin or clothing**, take off contaminated clothing. Rinse skin immediately with plenty of water for 15–20 minutes. Call a poison control centre or doctor for treatment advice.

**In case of 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 centre 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 centre or doctor for further treatment advice.

Take container, label or product name and Pest Control Product Registration Number with you, when seeking medical attention.

### 5. Fire-fighting Measures

**Extinguishing Media:** Water fog, alcohol foam, carbon dioxide, dry chemical.

**Special Firefighting Procedures:** Firefighters should wear self-contained breathing apparatus and full protective clothing when fighting chemical fires. Minimize and contain water runoff.

**Flash Point:** ..... Not determined (aqueous solution)

**Conditions of Flammability:** ..... None

**Hazardous Decomposition Products:** ... This product reacts with galvanized steel or unlined steel (except stainless steel) to produce hydrogen gas that may form a highly combustible gas mixture which could flash or explode. Decomposition under fire conditions may produce gases such as oxides of carbon, nitrogen and phosphorous.

**National Fire Protection Association (NFPA) Hazard Rating:**

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**Rating for this product: Health: 1      Flammability: 1      Reactivity: 1**  
Hazards Scale: 0 = Minimal 1 = Slight      2 = Moderate 3 = Serious 4 = Severe

## 6. Accidental Release Measures

Use safety equipment and procedures appropriate to the size of the spill. Keep unnecessary people away. Avoid runoff to natural waters and sewers. Surround and absorb spills with inert material such as perlite, sawdust, clay granules, vermiculite, sand or dirt. Contain all affected material in a closed, labeled container for proper disposal. Isolate from other waste materials. Clean contaminated area such as hard surfaces with detergent and water, collecting cleaning solution for proper disposal. Large spills to soil or similar surfaces may necessitate removal of top soil.

## 7. Handling and Storage

**Handling:** Avoid contact with skin, eyes and clothing. Wear goggles or face shield during mixing/loading. Wear a long-sleeved shirt, long pants, socks, shoes and chemical-resistant gloves. Rinse gloves before removal. After use, wash hands and other exposed skin. Remove and wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Avoid breathing spray mist. Use only outdoors or in a well-ventilated area.

**Storage:** Store the container tightly closed away from seeds, fertilizer, plants and foodstuffs. May be stored at any temperature.

## 8. Exposure Controls / Personal Protection

**Engineering Controls:** Use only outdoors or in a well-ventilated area.

**Personal Protective Equipment:** Goggles or face shield, long-sleeved shirt, long pants, socks, shoes and chemical-resistant gloves. Rinse gloves before removal.

**Exposure Guidelines:**

Component	TWA*	STEL**	Reference/Note
glyphosate-isopropylammonium	N/E	N/E	None found

\*Time-weighted Average, 8-hour unless otherwise noted.

\*\*Short Term Exposure Limit

NE = Not Established

Refer to approved product label for additional exposure control guidance.

## 9. Physical and Chemical Properties

**NOTE:** Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification. If no value is determined for the formulation, the value listed is the most relevant value of the predominant ingredient(s).

**Appearance (physical state, colour, etc.)** ..... clear yellowish liquid

**Odour** ..... odourless

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<b>Odour threshold</b> .....	not available
<b>pH</b> .....	4.4 – 5.0
<b>Melting point / Freezing point</b> .....	not available
<b>Initial boiling point and boiling range</b> .....	not available
<b>Flash point</b> .....	not available (aqueous solution)
<b>Evaporation rate</b> .....	not available
<b>Flammability (solids, gases)</b> .....	not applicable
<b>Upper / Lower flammability or explosive limits</b> ...	not available
<b>Vapour pressure</b> .....	not available
<b>Vapour density</b> .....	not available
<b>Relative density</b> .....	1.17 @ 20C
<b>Solubility(ies)</b> .....	soluble in water
<b>Partition coefficient: n-octanol/water</b> .....	not available
<b>Autoignition temperature</b> .....	not available
<b>Decomposition temperature</b> .....	~220C (glyphosate)
<b>Viscosity</b> .....	73.2 cP @ 20C

## 10. Stability and Reactivity

**Reactivity:** This product reacts with galvanized steel or unlined steel (except stainless steel) to produce hydrogen gas that may form a highly combustible gas mixture which could flash or explode.

**Chemical Stability:** Stable under normal handling and storage conditions.

**Possibility of Hazardous Reactions:** Hazardous polymerization will not occur. This product can react with caustic (basic) materials to liberate heat. This is not a polymerization but rather a chemical neutralization in an acid base reaction.

**Conditions to Avoid:** Excessive heat. Do not store near heat or flame.

**Incompatible Materials:** Avoid contact with strong acidic, basic or oxidizing agents. This product reacts with galvanized steel or unlined steel (except stainless steel) to produce hydrogen gas that may form a highly combustible gas mixture which could flash or explode.

**Hazardous Decomposition Products:** Under fire conditions, may produce gases such as oxides of carbon, nitrogen and phosphorous.

## 11. Toxicological Information

**Likely routes of exposure:** Inhalation, ingestion, skin and eye contact.

**Eye contact:** Causes eye irritation.

**Skin contact:** May cause skin irritation, generally of minimal degree.

**Ingestion:** May be harmful if swallowed. No significant adverse health effects are expected if only small amounts are swallowed.

**Inhalation:** May be harmful if inhaled.

**Medical Conditions Aggravated by Exposure:** Skin exposure may aggravate preexisting skin conditions. Inhalation of mist may aggravate preexisting respiratory conditions.

**Toxicological Data:**

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**Acute oral LD<sub>50</sub> (mg/kg)** ..... >5000 (Rat)  
**Acute dermal LD<sub>50</sub> (mg/kg)** ..... >5000 (Rat)  
**Acute inhalation LC<sub>50</sub> (mg/l)** ..... 2.6 (Rat, 4-hour exposure)  
**Skin corrosion/irritation** ..... Slightly irritating to skin (Rabbit)  
**Serious eye damage/irritation** ..... Moderately irritating to the eye (Rabbit)  
**Respiratory or skin sensitization** ... Not considered as a contact dermal sensitizer (Guinea pig)  
**Germ cell mutagenicity** ..... Glyphosate shows no evidence of genotoxicity.  
**Carcinogenicity** ..... The International Agency for Research on Cancer (IARC) lists exposure to glyphosate as probably carcinogenic to humans (Group 2A), on the basis of limited evidence in humans and some evidence in animals (2015). Other regulatory agencies classify glyphosate as non-carcinogenic.  
**Reproductive toxicity** ..... Animal reproduction studies with glyphosate indicate there is no increased sensitivity of the young relative to maternal animals.

## 12. Ecological Information

### Ecotoxicity:

Data are from published information on a similar formulation unless otherwise noted.

**Aquatic Invertebrate:** 48-Hour EC<sub>50</sub> (mg/L) ..... 11 (*Daphnia*)

**Fish:** 96-Hour LC<sub>50</sub> (mg/L) ..... 5.4 – 8.2 (Rainbow Trout), 5.8 – 7.3 (Bluegill Sunfish)

**Algae:** 72-96-Hour EC<sub>50</sub> (mg/L) 2.6 – 12.4 (*Selenastrum*)

**Birds:** Oral LD<sub>50</sub> (mg/kg) ..... >3851 (Bobwhite Quail) (glyphosate acid); 5-Day Dietary LC<sub>50</sub> >5620 mg/kg diet (Bobwhite Quail and Mallard Duck)

**Bees:** Oral and Contact LD<sub>50</sub> ..... >100 µg/bee

**Persistence and Degradability:** Glyphosate is degraded microbially to aminomethyl phosphonic acid (AMPA), which is further degraded to simpler molecules. Representative field soil half-lives range from 1 to 130 days depending on soil and climatic conditions.

**Mobility in Soil:** Glyphosate and AMPA are strongly adsorbed to soil. Essentially immobile.

**Bioaccumulation Potential:** Negligible.

## 13. Disposal Considerations

For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Disposal should be made in accordance with federal, provincial and local regulations.

Do not reuse container for any purpose. If applicable, return container in accordance with return program. If a recyclable container, dispose of at a container collection site. Contact local distributor, dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site, triple or pressure rinse the empty container adding rinsings to spray tank, and make container unsuitable for further use. If there is no container collection site in your area, dispose of the container in accordance with provincial requirements.

## 14. Transport Information



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**Canadian TDG Description (Road & Rail):** Not regulated for transport by road/rail.

**United States:**

**DOT Description:**

Non Regulated

**IMDG**

Non Regulated

**IATA**

**Non Regulated**

**15. Regulatory Information**

*Pest Control Products Act* Registration Number: ..... 25866

OPAC Schedule: .... 4

Read the approved label, authorized under the *Pest Control Products Act*, prior to using or handling the pest control product.

This chemical is a pest control product registered by Health Canada Pest Management Regulatory Agency and is subject to certain labelling requirements under the *Pest Control Products Act*. These requirements differ from the classification criteria and hazard information required for GHS-consistent safety data sheets. Following is the hazard information required on the pest control product label:

CAUTION IRRITANT

WHMIS exempt.

**16. Other Information**

This Safety Data Sheet (SDS) is designed to comply with the Globally Harmonized System (GHS) of classification, and the *Hazardous Products Regulations*.

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. The product labeling provides that information specifically for product use as intended.

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Company and published information is used in the development of this SDS. The information herein is presented in good faith and believed accurate at the date of publication. However, no warranty, expressed or implied, is given.

Revisions to the last issue: Addition of PMRA guidance info to Section 15.

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