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. Product and Company Identification

Product Name
WIDEMATCH* Herbicide

COMPANY IDENTIFICATION
Dow AgroSciences LLC
A Subsidiary of The Dow Chemical Company
9330 Zionsville Road
Indianapolis, IN 46268-1189
United States

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

EMERGENCY TELEPHONE NUMBER

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

2. Hazards Identification

Emergency Overview
Color: Yellow to brown
Physical State: Liquid.
Odor: Aromatic
Hazards of product:

CAUTION! May cause eye irritation. May cause skin irritation. Isolate area. Toxic fumes may be released in fire situations. Suspect cancer hazard. May cause cancer. Highly toxic to fish and/or other aquatic organisms.

OSHA Hazard Communication Standard
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects
Eye Contact: May cause moderate eye irritation. May cause slight corneal injury.
Skin Contact: Brief contact may cause slight skin irritation with local redness. May cause drying and flaking of the skin. Prolonged contact may cause skin irritation with local redness.

Skin Absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts.
Inhalation: Prolonged exposure is not expected to cause adverse effects. Excessive exposure may cause irritation to upper respiratory tract (nose and throat).
Ingestion: Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.
Aspiration hazard: Based on physical properties, not likely to be an aspiration hazard.
Effects of Repeated Exposure: Based on information for component(s): Excessive exposure to solvent(s) may cause respiratory irritation and central nervous system depression. Cataracts and other eye effects have been reported in humans repeatedly exposed to naphthalene vapor or dust. Excessive exposure may cause hemolysis, thereby impairing the blood's ability to transport oxygen. Ingestion of naphthalene by humans has caused hemolytic anemia.
Cancer Information: Contains naphthalene which has caused cancer in some laboratory animals. In humans, there is limited evidence of cancer in workers involved in naphthalene production. Limited oral studies in rats were negative.
Birth Defects/Developmental Effects: For the active ingredient(s): Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Clopyralid caused birth defects in test animals, but only at greatly exaggerated doses that were severely toxic to the mothers. No birth defects were observed in animals given clopyralid at doses several times greater than those expected during normal exposure.

3. Composition Information

Component	CAS #	Amount
Fluroxypyr 1-methylheptyl ester	81406-37-3	12.3 %
Clopyralid monoethanolamine salt	57754-85-5	11.3 %
Heavy aromatic naphtha	64742-94-5	23.7 %
Dipropylene glycol monomethyl ether	34590-94-8	17.4 %
Naphthalene	91-20-3	>= 1.2 - <= 2.4 %
1,2,4-Trimethylbenzene	95-63-6	>= 0.2 - <= 1.2 %
1,3,5-Trimethylbenzene	108-67-8	0.2 %
Balance	Not available	>= 31.5 - <= 33.7 %

4. First-aid measures

Description of first aid measures

General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). 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. Suitable emergency eye wash facility should be available in work area.
Ingestion: 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.

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), no additional symptoms and effects are anticipated.

Indication of immediate medical attention and special treatment needed

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.
Skin contact may aggravate preexisting dermatitis.

5. Fire Fighting Measures

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

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: Hydrogen fluoride. 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. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. 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: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Keep upwind of spill. Ventilate area of leak or spill. Refer to Section 7, Handling, for additional precautionary measures. 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

Handling
General Handling: Keep out of reach of children. Do not swallow. Avoid contact with eyes, skin, and clothing. Avoid breathing vapor or mist. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

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

Exposure Limits

Component	List	Type	Value
Fluroxypyr 1-methylheptyl ester	Dow IHG	TWA	10 mg/m3
Dipropylene glycol monomethyl ether	OSHA Table Z-1	PEL	600 mg/m3 100 ppm SKIN
	ACGIH	TWA	100 ppm SKIN
	ACGIH	STEL	150 ppm SKIN
Naphthalene	ACGIH	TWA	10 ppm SKIN
	ACGIH	STEL	15 ppm SKIN
	OSHA Table Z-1	PEL	50 mg/m3 10 ppm
1,2,4-Trimethylbenzene	ACGIH	TWA	25 ppm
1,3,5-Trimethylbenzene	ACGIH	TWA	25 ppm

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.
A "skin" notation following the inhalation exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact.
It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

Personal Protection
Eye/Face Protection: Use chemical goggles.
Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Styrene/butadiene rubber. Viton. Examples of acceptable glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Natural rubber ("latex"). Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

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.
Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls
Ventilation: 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.

9. Physical and Chemical Properties

Appearance	
Physical State	Liquid.
Color	Yellow to brown
Odor	Aromatic
Odor Threshold	No test data available
pH	4.77 (@ 1 %)
Melting Point	Not applicable
Freezing Point	No test data available
Boiling Point (760 mmHg)	No test data available.
Flash Point - Closed Cup	> 100 °C (> 212 °F) *Closed Cup*
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammable Limits In Air	**Lower**: No test data available **Upper**: No test data available
Vapor Pressure	No test data available
Vapor Density (air = 1)	No test data available
Specific Gravity (H2O = 1)	No test data available
Solubility in water (by weight)	emulsifiable
Partition coefficient, n-octanol/water (log Pow)	No data available for this product. See Section 12 for individual component data.
Autoignition Temperature	No test data available
Decomposition Temperature	No test data available
Dynamic Viscosity	27.7 cPs
Explosive properties	no data available
Oxidizing properties	no data available
Liquid Density	1.0419 g/ml @ 20 °C *Digital density meter*

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: Product can oxidize at elevated temperatures. Some components of this product can decompose at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible Materials: Avoid contact with: Strong acids. Strong bases. 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. Hydrogen fluoride. Toxic gases are released during decomposition.

11. Toxicological Information

Acute Toxicity

Ingestion
As product: LD50, rat, female > 5,000 mg/kg
Dermal
As product: LD50, rat > 5,000 mg/kg
Inhalation
As product: LC50, 4 h, Aerosol, rat 5.39 mg/l

Eye damage/eye irritation
May cause moderate eye irritation. May cause slight corneal injury.

Skin corrosion/irritation
Brief contact may cause slight skin irritation with local redness. May cause drying and flaking of the skin. Prolonged contact may cause skin irritation with local redness.

Sensitization
Skin
Did not cause allergic skin reactions when tested in guinea pigs.
Respiratory
No data available.

Repeated Dose Toxicity
For the active ingredient(s): Based on available data, repeated exposures are not anticipated to cause significant adverse effects. Based on information for component(s): Excessive exposure to solvent(s) may cause respiratory irritation and central nervous system depression. Cataracts and other eye effects have been reported in humans repeatedly exposed to naphthalene vapor or dust. Excessive exposure may cause hemolysis, thereby impairing the blood's ability to transport oxygen. Ingestion of naphthalene by humans has caused hemolytic anemia.

Chronic Toxicity and Carcinogenicity
Contains naphthalene which has caused cancer in some laboratory animals. In humans, there is limited evidence of cancer in workers involved in naphthalene production. Limited oral studies in rats were negative. For the active ingredient(s): Did not cause cancer in laboratory animals.

Carcinogenicity Classifications:

Component	List	Classification
Naphthalene	IARC	Possibly carcinogenic to humans.; 2B
	NTP	Anticipated carcinogen.

Developmental Toxicity
For the active ingredient(s): Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Clopyralid caused birth defects in test animals, but only at greatly exaggerated doses that were severely toxic to the mothers. No birth defects were observed in animals given clopyralid at doses several times greater than those expected during normal exposure. Contains component(s) which did not cause birth defects in laboratory animals.

Reproductive Toxicity
For the active ingredient(s): In animal studies, did not interfere with reproduction.

Genetic Toxicology
For the active ingredient(s): In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative. For the minor component(s): In vitro genetic toxicity studies were negative in some cases and positive in other cases.

12. Ecological Information

Toxicity

Data for Component: **Fluroxypyr 1-methylheptyl ester**

Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species). 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).

Fish Acute & Prolonged Toxicity
LC50, Oncorhynchus mykiss (rainbow trout), semi-static test, 96 h: > 0.225 mg/l
LC50, Cyprinodon variegatus (sheepshead minnow), flow-through test, 96 h: > 0.0866 mg/l
Toxicity to aquatic species occurs at concentrations above material's water solubility.
Aquatic Invertebrate Acute Toxicity

EC50, Daphnia magna (Water flea), semi-static test, 48 h: > 0.183 mg/l
Toxicity to aquatic species occurs at concentrations above material's water solubility.

Aquatic Plant Toxicity

ErC50, diatom Navicula sp., static test, 72 h: 0.24 mg/l

Toxicity to Above Ground Organisms

oral LD50, Colinus virginianus (Bobwhite quail): > 2000 mg/kg bodyweight.
dietary LC50, Colinus virginianus (Bobwhite quail): > 2000 mg/kg diet.
oral LD50, Apis mellifera (bees): > 100 micrograms/bee
contact LD50, Apis mellifera (bees): > 100 micrograms/bee

Toxicity to Soil Dwelling Organisms

LC50, Earthworm, Lumbricus terrestris: > 1,000 mg/kg

Data for Component: **Clopyralid monoethanolamine salt**

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). Material is slightly toxic to birds on an acute basis (LD50 between 501 and 2000 mg/kg). Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).

Fish Acute & Prolonged Toxicity

For similar active ingredient(s). Clopyralid. LC50, Oncorhynchus mykiss (rainbow trout), static test, 96 h: > 99.9 mg/l

Aquatic Invertebrate Acute Toxicity

For similar active ingredient(s). Clopyralid. EC50, Daphnia magna (Water flea), static test, 48 h, immobilization: > 99.0 mg/l

Toxicity to Above Ground Organisms

For similar active ingredient(s). Clopyralid. oral LD50, Anas platyrhynchos (Mallard duck): 1465 - 2000 mg/kg bodyweight.
For similar active ingredient(s). Clopyralid. dietary LC50, Colinus virginianus (Bobwhite quail): > 5000 mg/kg diet.
For similar active ingredient(s). Clopyralid. contact LD50, Apis mellifera (bees): > 100 micrograms/bee
For similar active ingredient(s). Clopyralid. oral LD50, Apis mellifera (bees): > 98.1 micrograms/bee

Data for Component: **Heavy aromatic naphtha**

Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

LC50, Gambusia affinis (Mosquito fish), 96 h: 811 mg/l

Aquatic Plant Toxicity

EC50, algae, 72 h: 21 - 165 mg/l

Data for Component: **Dipropylene glycol monomethyl ether**

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).

Fish Acute & Prolonged Toxicity

LC50, Poecilia reticulata (guppy), static test, 96 h: > 1,000 mg/l

Aquatic Invertebrate Acute Toxicity

LC50, Daphnia magna (Water flea), static test, 48 h, lethality: 1,919 mg/l
LC50, Crangon crangon (shrimp), semi-static test, 96 h: > 1,000 mg/l

Aquatic Plant Toxicity

ErC50, Pseudokirchneriella subcapitata (green algae), static test, biomass growth inhibition, 96 h: > 969 mg/l

Aquatic Invertebrates Chronic Toxicity Value

Daphnia magna (Water flea), flow-through test, 22 d, NOEC: > 0.5 mg/l, LOEC: > 0.5 mg/l

Data for Component: **Naphthalene**

Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

LC50, Oncorhynchus mykiss (rainbow trout), 96 h: 0.11 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, Daphnia magna (Water flea), static test, 48 h, immobilization: 1.6 - 24.1 mg/l

Data for Component: **1,2,4-Trimethylbenzene**

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

LC50, Pimephales promelas (fathead minnow), flow-through test, 96 h: 7.7 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, Daphnia magna (Water flea), 48 h: 3.6 mg/l

Data for Component: **1,3,5-Trimethylbenzene**

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

LC50, Carassius auratus (goldfish), flow-through test, 96 h: 12.5 mg/l

Aquatic Invertebrate Acute Toxicity

LC50, Daphnia magna (Water flea), static test, 48 h, mortality: 6 mg/l

Aquatic Plant Toxicity

EbC50, alga Scenedesmus sp., biomass growth inhibition, 48 h: 25 mg/l

Aquatic Invertebrates Chronic Toxicity Value

Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, NOEC: 0.4 mg/l

Persistence and Degradability

Data for Component: **Fluroxypyr 1-methylheptyl ester**

Material is not readily biodegradable according to OECD/EEC guidelines.

Stability in Water (1/2-life):

12.8 - 16.5 h

Data for Component: **Clopyralid monoethanolamine salt**

For similar active ingredient(s). Clopyralid. Biodegradation under aerobic laboratory conditions is below detectable limits (BOD20 or BOD28/ThOD < 2.5%).

Data for Component: **Heavy aromatic naphtha**

Material is not readily biodegradable according to OECD/EEC guidelines.

Data for Component: **Dipropylene glycol monomethyl ether**

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% biodegradation in OECD test(s) for inherent biodegradability).

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
75 %	28 d	OECD 301F Test	pass

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
5.00E-05 cm3/s	3.4 - 10.4 h	Estimated.

Biological oxygen demand (BOD):

BOD 5	BOD 10	BOD 20	BOD 28
0 %	0 %	31.6 %	

Chemical Oxygen Demand: 2.02 mg/mg

Theoretical Oxygen Demand: 2.06 mg/mg

Data for Component: **Naphthalene**

Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD > 40%).

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
2.16E-11 cm3/s	5.9 h	Estimated.

Biological oxygen demand (BOD):

BOD 5	BOD 10	BOD 20	BOD 28
57.000 %	71.000 %	71.000 %	

Theoretical Oxygen Demand: 3.00 mg/mg

Data for Component: **1,2,4-Trimethylbenzene**

Material is expected to biodegrade only very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
4 - 18 %	28 d	OECD 301C Test	Not applicable

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
1.670E-11 cm3/s	0.641 d	Estimated.

Theoretical Oxygen Demand: 3.19 mg/mg

Data for Component: **1,3,5-Trimethylbenzene**

Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
0 %	28 d	OECD 301C Test	Not applicable
50 %	4.4 d	Calculated	Not applicable

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
3.51E-11 cm3/s	3.7 h	Estimated.

Theoretical Oxygen Demand: 3.19 mg/mg

Bioaccumulative potential

Data for Component: **Fluroxypyr 1-methylheptyl ester**

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient, n-octanol/water (log Pow): 4.5 Measured
Bioconcentration Factor (BCF): 26; Oncorhynchus mykiss (rainbow trout); Measured

Data for Component: **Clopyralid monoethanolamine salt**

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

Data for Component: **Heavy aromatic naphtha**

Bioaccumulation: No data available.

Data for Component: **Dipropylene glycol monomethyl ether**

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient, n-octanol/water (log Pow): 1.01 Measured

Data for Component: **Naphthalene**

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
Partition coefficient, n-octanol/water (log Pow): 3.3 Measured
Bioconcentration Factor (BCF): 40 - 300; Fish; Measured

Data for Component: **1,2,4-Trimethylbenzene**

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
Partition coefficient, n-octanol/water (log Pow): 3.63 Measured
Bioconcentration Factor (BCF): 33 - 275; Cyprinus carpio (Carp); Measured

Data for Component: **1,3,5-Trimethylbenzene**

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
Partition coefficient, n-octanol/water (log Pow): 3.42 Measured
Bioconcentration Factor (BCF): 161; Pimephales promelas (fathead minnow); Measured

Mobility in soil

Data for Component: **Fluroxypyr 1-methylheptyl ester**

Mobility in soil: Expected to be relatively immobile in soil (Koc > 5000).

Partition coefficient, soil organic carbon/water (Koc): 6,200**Henry's Law Constant (H):** 5.42E-08 atm*m3/mole; 25 °C Measured

Data for Component: **Clopyralid monoethanolamine salt**

Mobility in soil: For similar active ingredient(s)., Clopyralid., Potential for mobility in soil is very high (Koc between 0 and 50).

Data for Component: **Heavy aromatic naphtha**

Mobility in soil: No data available.

Data for Component: **Dipropylene glycol monomethyl ether**

Mobility in soil: Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process., Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient, soil organic carbon/water (Koc): 0.28 Estimated.
Henry's Law Constant (H): 1.6E-07 atm*m3/mole; 25 °C Estimated.

Data for Component: **Naphthalene**

Mobility in soil: Potential for mobility in soil is medium (Koc between 150 and 500).
Partition coefficient, soil organic carbon/water (Koc): 240 - 1,300 Measured
Henry's Law Constant (H): 2.92E-04 - 5.53E-04 atm*m3/mole; 25 °C Measured
Distribution in Environment: Mackay Level 1 Fugacity Model:

Air	Water.	Biota	Soil	Sediment
74 %	8.5 %	< 0.01 %	18 %	0.39 %

Data for Component: **1,2,4-Trimethylbenzene**

Mobility in soil: Potential for mobility in soil is low (Koc between 500 and 2000).
Partition coefficient, soil organic carbon/water (Koc): 720 Estimated.
Henry's Law Constant (H): 6.16E-03 atm*m3/mole; 25 °C Measured

Data for Component: **1,3,5-Trimethylbenzene**

Mobility in soil: Potential for mobility in soil is low (Koc between 500 and 2000).
Partition coefficient, soil organic carbon/water (Koc): 741.65 Estimated.
Henry's Law Constant (H): 1.97E-02 atm*m3/mole; 25 °C Estimated.
Distribution in Environment: Mackay Level 1 Fugacity Model:

Air	Water.	Biota	Soil	Sediment
97.26 %	0.62 %	< 0.01 %	2.08 %	0.05 %

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.

14. Transport Information

DOT Non-Bulk
NOT REGULATED

DOT Bulk
Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical Name: CONTAINS HEAVY AROMATIC NAPHTHA, NAPHTHALENE
Hazard Class: 9 **ID Number:** UN3082 **Packing Group:** PG III

IMDG
Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical Name: CONTAINS HEAVY AROMATIC NAPHTHA, NAPHTHALENE

Hazard Class: 9 **ID Number:** UN3082 **Packing Group:** PG III
EMS Number: F-A,S-F
Marine pollutant.: Yes

ICAO/IATA

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical Name: CONTAINS HEAVY AROMATIC NAPHTHA, NAPHTHALENE
Hazard Class: 9 **ID Number:** UN3082 **Packing Group:** PG III
Cargo Packing Instruction: 964
Passenger Packing Instruction: 964
Additional Information

Reportable quantity: 4,227 lb – NAPHTHALENE

MARINE POLLUTANT

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.

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.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard	No
Delayed (Chronic) Health Hazard	Yes
Fire Hazard	No
Reactive Hazard	No
Sudden Release of Pressure Hazard	No

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

Component	CAS #	Amount
Naphthalene	91-20-3	>= 1.2 - <= 2.4 %
1,2,4-Trimethylbenzene	95-63-6	>= 0.2 - <= 1.2 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

Component	CAS #	Amount
Heavy aromatic naphtha	64742-94-5	23.7%
Dipropylene glycol monomethyl ether	34590-94-8	17.4%
Naphthalene	91-20-3	>= 1.2 - <= 2.4 %
1,2,4-Trimethylbenzene	95-63-6	>= 0.2 - <= 1.2 %

Pennsylvania (Worker and Community Right-To-Know Act): 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.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103

This product contains the following substances which are subject to CERCLA Section 103 reporting requirements and which are listed in 40 CFR 302.4.

Component	CAS #	Amount
Naphthalene	91-20-3	>= 1.2 - <= 2.4 %

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)
WARNING: This product contains a chemical(s) known to the State of California to cause cancer.

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

16. Other Information

Hazard Rating System

NFPA	Health	Fire	Reactivity
	1	1	0

Revision

Identification Number: 77494 / 1016 / Issue Date 04/30/2012 / Version: 8.0
DAS Code: GF-1203
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

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.