



Safety Data Sheet

Issue Date: 10-Nov-2008

Revision Date: 01-Oct-2014

Version 1

1. IDENTIFICATION

Product Identifier

Product Name Triflurex HFP

Other means of identification

SDS # ADAMA-059

Registration Number(s) EPA Reg. No. 66222-46
UN/ID No UN3082

Recommended use of the chemical and restrictions on use

Recommended Use EPA registered pesticide.

Details of the supplier of the safety data sheet

Manufacturer Address

Makhteshim Agan of North America, Inc. (d/b/a ADAMA)
3120 Highwoods Blvd., Suite 100
Raleigh, NC 27604

Emergency Telephone Number

Company Phone Number 1-919-256-9300
Emergency Telephone (24 hr) For fire, spill and/or leak contact INFOTRAC:
1-800-535-5053 (North America) 1-352-323-3500 (International)
For medical emergencies and health/safety inquiries, contact PROSAR:
1-877-250-9291

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: This chemical is a product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-EPA registered chemicals. Please see Section 15 for additional EPA information.

Appearance Clear, deep orange liquid

Physical State Liquid @ 23°C

Odor Aromatic

Classification

Skin sensitization	Category 1
Aspiration toxicity	Category 1

Hazards Not Otherwise Classified (HNOC)

May be harmful if swallowed
May be harmful in contact with skin
Causes mild skin irritation

Signal Word**Danger****Hazard Statements**

May cause an allergic skin reaction
 May be fatal if swallowed and enters airways

**Precautionary Statements - Prevention**

Use personal protective equipment as required
 Avoid breathing dust/fume/gas/mist/vapors/spray
 Contaminated work clothing should not be allowed out of the workplace
 Wear protective gloves

Precautionary Statements - Response

If exposed or concerned: Get medical advice/attention
 IF ON SKIN: Wash with plenty of soap and water
 If skin irritation or rash occurs: Get medical advice/attention
 Wash contaminated clothing before reuse
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
 Do not induce vomiting

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other Hazards

Very toxic to aquatic life with long lasting effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Naphtha (petroleum), heavy aromatic	64742-94-5	47.72-50.68
Trifluralin	1582-09-8	41.49-44.06
2-Ethylhexanol	104-76-7	2-2.2

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

First Aid Measures

General Advice	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment. If exposed or concerned: Get medical advice/attention.
Eye Contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison control center or doctor for treatment advice.
Skin Contact	IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention.
Inhalation	Give oxygen if breathing is difficult. If breathing has stopped, call 911, give artificial respiration. Call a poison control center or doctor for further treatment advice.
Ingestion	Immediately call a poison center or doctor/physician. Do not induce vomiting, unless directed by medical personnel. Never give anything by mouth to an unconscious person.

Most important symptoms and effects

Symptoms	Causes mild skin irritation. May be harmful in contact with skin. May cause an allergic skin reaction. May be harmful if swallowed. May be fatal if swallowed and enters airways. Direct contact with eyes will cause irritation.
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Indication of any immediate medical attention and special treatment needed

Notes to Physician	Treat symptomatically. Aspiration of material into the lungs due to vomiting can cause chemical pneumonitis which can be fatal.
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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Dry chemical. Carbon dioxide (CO₂). Water spray (fog).

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical

None known.

Hazardous Combustion Products Oxides of carbon. Nitrogen oxides (NO_x). Fluorinated hydrocarbons. Other unidentified toxic and/or irritating compounds.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Evacuate area of unprotected personnel. Remain upwind of fire to avoid hazardous vapors and decomposition products. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Closed containers may build up pressure and rupture if exposed to extreme heat. Cool exposed containers with water to prevent rupturing.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions	Wear protective clothing as described in Section 8 of this safety data sheet. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.
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Environmental Precautions	Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. See Section 13: DISPOSAL CONSIDERATIONS.
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Methods and material for containment and cleaning up

Methods for Containment	Prevent further leakage or spillage if safe to do so.
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Methods for Clean-Up	Absorb with inert material or sweep up, and then place in suitable container for chemical waste.
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7. HANDLING AND STORAGE**Precautions for safe handling**

Advice on Safe Handling	Handle in accordance with good industrial hygiene and safety practice. Use personal protection recommended in Section 8. Avoid contact with skin, eyes or clothing. Wash face, hands, and any exposed skin thoroughly after handling. Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Use in accordance with product label instructions. Do not eat, drink, smoke, or apply cosmetics while handling this product. Do not breathe dust/fume/gas/mist/vapors/spray.
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Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep container tightly closed and store in a cool, dry and well-ventilated place. Keep out of the reach of children. Keep/store only in original container. Keep away from food, drink and animal feeding stuffs. Store at ambient conditions. Store locked up. Avoid freezing while in storage. Do not store in open or unlabeled containers. Store away from heat and open flame. Storage temperature > 40 F.
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Incompatible Materials	Strong oxidizing agents.
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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<u>Exposure Guidelines</u>	The following information is given as general guidance
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Appropriate engineering controls

Engineering Controls	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 OF END USE PRODUCTS CONTAINING THIS MATERIAL, CONSULT THE SDS OR PRODUCT LABEL FOR THE END USE PRODUCT.
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Individual protection measures, such as personal protective equipment

Eye/Face Protection	Wear safety glasses with side shields (or goggles). Goggles are recommended.
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Skin and Body Protection	Wear appropriate clothing to prevent repeated or prolonged skin contact. Wear long-sleeved shirt, long pants, and shoes plus socks. Use chemical resistant gloves, such as P.V.C., butyl-rubber, nitrile-rubber, or neoprene.
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Respiratory Protection	NIOSH-approved respirator or mask in the absence of adequate ventilation.
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General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice. Wash face, hands and any exposed skin thoroughly after handling. Take off all contaminated clothing and wash it before reuse. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. Contaminated work clothing should not be allowed out of the workplace.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid @ 23°C		
Appearance	Clear, deep orange liquid	Odor	Aromatic
Color	Clear, deep orange	Odor Threshold	Not determined
<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>	
pH	5.59	@ 25°C	
Melting Point/Freezing Point	Not determined		
Boiling Point/Boiling Range	Not determined		
Flash Point	> 107.2 °C / > 225 °F	Pensky-Martens Closed Cup (PMCC)	
Evaporation Rate	Not determined		
Flammability (Solid, Gas)	Liquid-not applicable		
Upper Flammability Limits	~11.8%		
Lower Flammability Limit	~1.8%		
Vapor Pressure	Not determined		
Vapor Density	Not determined		
Specific Gravity	1.1225		
Water Solubility	Not determined		
Solubility in other solvents	Not determined		
Partition Coefficient	Not determined		
Auto-ignition Temperature	Not determined		
Decomposition Temperature	Not determined		
Kinematic Viscosity	Not determined		
Dynamic Viscosity	13.4873 mm ² /s cSt	@ 22°C	
Explosive Properties	Not determined		
Oxidizing Properties	Not an oxidizer		

10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions.

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization Hazardous polymerization does not occur.

Conditions to Avoid

Incompatible Materials. Keep from freezing. Excessive heat. Open flames.

Incompatible Materials

Strong oxidizing agents.

Hazardous Decomposition Products

Carbon oxides. Nitrogen oxides (NOx). Fluorinated hydrocarbons. Other undetermined compounds.

11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure****Product Information**

Eye Contact	Avoid contact with eyes.
Skin Contact	May be harmful in contact with skin. Causes mild skin irritation.
Inhalation	Avoid breathing vapors or mists.
Ingestion	May be harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Naphtha (petroleum), heavy aromatic 64742-94-5	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 590 mg/m ³ (Rat) 4 h
Trifluralin 1582-09-8	= 1930 mg/kg (Rat)	> 5 g/kg (Rat)	= 2800 mg/m ³ (Rat) 1 h
Calcium Dodecylbenze Sulfonate 26264-06-2	= 4 g/kg (Rat)	-	-
2-Ethylhexanol 104-76-7	1516 - 2774 mg/kg (Rat)	-	-

Information on physical, chemical and toxicological effects

Symptoms Please see section 4 of this SDS for symptoms.

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

Sensitization May cause an allergic skin reaction.

Carcinogenicity Not classifiable as a human carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Trifluralin 1582-09-8		Group 3		

Legend

IARC (International Agency for Research on Cancer)

Group 3 IARC components are "not classifiable as human carcinogens"

Aspiration hazard May be fatal if swallowed and enters airways.

Numerical measures of toxicity

Not determined

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Very toxic to aquatic life with long lasting effects. This pesticide is extremely toxic to freshwater marine and estuarine fish and aquatic invertebrates including shrimp and oyster. Do not apply in a manner, which will directly expose canals, lakes, streams, ponds, marshes, or estuaries to aerial drift. Do not contaminate water when disposing of equipment washwaters. For terrestrial uses, do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark.

Component Information

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Naphtha (petroleum), heavy aromatic 64742-94-5	2.5: 72 h Skeletonema costatum mg/L EC50	19: 96 h Pimephales promelas mg/L LC50 static 2.34: 96 h Oncorhynchus mykiss mg/L LC50 1740: 96 h Lepomis macrochirus mg/L LC50 static 45: 96 h Pimephales promelas mg/L LC50 flow-through 41: 96 h Pimephales promelas mg/L LC50		0.95: 48 h Daphnia magna mg/L EC50
Trifluralin 1582-09-8		0.083 - 0.134: 96 h Pimephales promelas mg/L LC50 static 0.099: 96 h Pimephales promelas mg/L LC50 0.0072 - 0.014: 96 h Oncorhynchus mykiss mg/L LC50 static 0.0168 - 0.0199: 96 h Lepomis macrochirus mg/L LC50 static 0.036 - 0.051: 96 h Cyprinus carpio mg/L LC50 static		0.32 - 1: 48 h Daphnia magna mg/L EC50 Static 0.16 - 0.36: 48 h Daphnia pulex mg/L EC50 Static
Calcium Dodecylbenze Sulfonate 26264-06-2		10.8: 96 h Oncorhynchus mykiss mg/L LC50 static		
2-Ethylhexanol 104-76-7	11.5: 72 h Desmodesmus subspicatus mg/L EC50	32 - 37: 96 h Oncorhynchus mykiss mg/L LC50 static 7.5: 96 h Oncorhynchus mykiss mg/L LC50 27 - 29.5: 96 h Pimephales promelas mg/L LC50 flow-through 29.7: 96 h Pimephales promelas mg/L LC50 static 10.0 - 33.0: 96 h Lepomis macrochirus mg/L LC50 static		39: 48 h Daphnia magna mg/L EC50

Persistence/Degradability

Not determined.

Bioaccumulation

Not determined.

Mobility

Chemical Name	Partition Coefficient
Naphtha (petroleum), heavy aromatic 64742-94-5	6.1
2-Ethylhexanol 104-76-7	3.1

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS**Waste Treatment Methods****Disposal of Wastes**

Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative of the nearest EPA Regional Office for guidance.

Contaminated Packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION**Note**

Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT

UN/ID No	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s. (trifluralin)
Hazard Class	9
Packing Group	III
Reportable Quantity (RQ)	10 lb

IATA

UN/ID No	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s. (trifluralin)
Hazard Class	9
Packing Group	III
Description	Marine Pollutant

IMDG

UN/ID No	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s. (trifluralin)
Hazard Class	9
Packing Group	III
Marine Pollutant	Marine Pollutant

15. REGULATORY INFORMATION**International Inventories****TSCA**

All ingredients are listed or exempt from listing on Chemical Substance Inventory

Legend:*TSCA - United States Toxic Substances Control Act Section 8(b) Inventory**DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List**EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances**ENCS - Japan Existing and New Chemical Substances**IECSC - China Inventory of Existing Chemical Substances**KECL - Korean Existing and Evaluated Chemical Substances**PICCS - Philippines Inventory of Chemicals and Chemical Substances**AICS - Australian Inventory of Chemical Substances***US Federal Regulations****CERCLA**

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Trifluralin 1582-09-8	10 lb		RQ 10 lb final RQ RQ 4.54 kg final RQ
Calcium Dodecylbenze Sulfonate 26264-06-2	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

SARA 313

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Trifluralin - 1582-09-8	1582-09-8	41.49-44.06	1.0

CWA (Clean Water Act)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Calcium Dodecylbenze Sulfonate	1000 lb			X

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Trifluralin 1582-09-8	X	X	X
Calcium Dodecylbenze Sulfonate 26264-06-2	X	X	X

2-Ethylhexanol 104-76-7		X	X
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EPA Pesticide Registration Number 66222-46

EPA Statement

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

EPA Pesticide Label

Signal Word: Caution

Harmful if swallowed. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling

Difference between SDS and EPA pesticide label

	EPA	OSHA
Signal Word	Caution	Danger
Acute toxicity - Oral	Harmful if swallowed	May be harmful if swallowed
Acute toxicity - Dermal	N/A	May be harmful in contact with skin
Skin corrosion/irritation	N/A	Causes mild skin irritation
Serious eye damage/eye irritation	Causes moderate eye irritation	N/A
Skin sensitization	N/A	May cause an allergic skin reaction
Aspiration Hazard	N/A	May be fatal if swallowed and enters airways

16. OTHER INFORMATION

NFPA

Health Hazards

Flammability

Instability

Special Hazards

2

1

0

Not determined

HMIS

Health Hazards

Flammability

Physical Hazards

Personal Protection

Not determined

Not determined

Not determined

Not determined

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Revision Note: New format

Disclaimer

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.

End of Safety Data Sheet