



# Safety Data Sheet

Issue Date: 10-Nov-2008

Revision Date: 16-Feb-2018

Version 4

## 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  
1-919-256-9300

### Emergency Telephone Number

**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 ProPharma:  
1-877-250-9291

## 2. HAZARDS IDENTIFICATION

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

Acute toxicity – Inhalation (Dusts/Mists)	Category 4
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**

Harmful if inhaled

May be fatal if swallowed and enters airways

**Precautionary Statements - Prevention**

Avoid breathing dust/fume/gas/mist/vapors/spray

Use only outdoors or in a well-ventilated area

**Precautionary Statements - Response**

IF INHALED: Remove person to fresh air and keep comfortable for breathing

Call a poison center/doctor if you feel unwell

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-%
Trifluralin	1582-09-8	41.49-44.06
Proprietary Solvent 1	Proprietary	<45
Proprietary Solvent 2	Proprietary	<3

\*\*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.

**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 be harmful if swallowed. May be fatal if swallowed and enters airways. Direct contact with eyes will cause irritation.

**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.

**5. FIRE-FIGHTING MEASURES****Suitable Extinguishing Media**

Dry chemical. Carbon dioxide (CO<sub>2</sub>). 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<sub>x</sub>). 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.

**Environmental Precautions** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. See Section 13: DISPOSAL CONSIDERATIONS.

**Methods and material for containment and cleaning up**

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

**Methods for Clean-Up** Absorb with inert material or sweep up, and then place in suitable container for chemical waste.

**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.

**Conditions for safe storage, including any incompatibilities**

<b>Storage Conditions</b>	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. Do not store in open or unlabeled containers. Store away from heat and open flame. Storage temperature > 40 F.
<b>Incompatible Materials</b>	Strong oxidizing agents.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Exposure Guidelines** The following information is given as general guidance

**Appropriate engineering controls**

**Engineering Controls** Please refer to the product label. Use only with adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

**Individual protection measures, such as personal protective equipment**

<b>Eye/Face Protection</b>	Wear safety glasses with side shields (or goggles). Goggles are recommended.
<b>Skin and Body Protection</b>	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.
<b>Respiratory Protection</b>	NIOSH-approved respirator or mask in the absence of adequate ventilation.
<b>General Hygiene Considerations</b>	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**

<b>Physical State</b>	Liquid @ 23°C	<b>Odor</b>	Aromatic
<b>Appearance</b>	Clear, deep orange liquid	<b>Odor Threshold</b>	Not determined
<b>Color</b>	Clear, deep orange	<b>Remarks • Method</b>	
<b>Property</b>	<b>Values</b>		
<b>pH</b>	5.59		
<b>Melting Point/Freezing Point</b>	Not determined		
<b>Boiling Point/Boiling Range</b>	Not determined		
<b>Flash Point</b>	85° C / 185°F		
<b>Evaporation Rate</b>	Not determined		
<b>Flammability (Solid, Gas)</b>	Liquid-not applicable		
<b>Upper Flammability Limits</b>	~11.8%		
<b>Lower Flammability Limit</b>	~1.8%		
<b>Vapor Pressure</b>	Not determined		
<b>Vapor Density</b>	Not determined		
<b>Specific Gravity</b>	1.0727-1.22 g/cm <sup>3</sup>		
<b>Water Solubility</b>	Not determined		
<b>Solubility in other solvents</b>	Not determined		

<b>Partition Coefficient</b>	Not determined	
<b>Auto-ignition Temperature</b>	Not determined	
<b>Decomposition Temperature</b>	Not determined	
<b>Kinematic Viscosity</b>	Not determined	
<b>Dynamic Viscosity</b>	13.4873 mm <sup>2</sup> /s	cSt @ 22°C
<b>Explosive Properties</b>	Not determined	
<b>Oxidizing Properties</b>	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. 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

<b>Eye Contact</b>	Avoid contact with eyes.
<b>Skin Contact</b>	May be harmful in contact with skin. Causes mild skin irritation.
<b>Inhalation</b>	Harmful if inhaled.
<b>Ingestion</b>	May be harmful if swallowed.

### Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Proprietary Solvent 1	> 5000 mg/kg ( Rat )	> 2000 mg/kg ( Rabbit )	> 590 mg/m <sup>3</sup> ( Rat ) 4 h
Trifluralin 1582-09-8	= 1930 mg/kg ( Rat )	> 5 g/kg ( Rat )	= 2800 mg/m <sup>3</sup> ( Rat ) 1 h
Proprietary Solvent 2	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**

**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.

**Product Information (Numerical measures of toxicity)**

**Acute Oral LD50 (Rat):** Between 500 and 5,000 mg/kg

**Acute Dermal LD50 (Rabbit):** >5,000 mg/kg

**Acute Inhalation LC50 (Rat):** >2.03 mg/L (4-hr)

**Eye Irritation:** Moderately irritating.

**Dermal Irritation:** Mildly irritating.

**Dermal Sensitization:** Not a sensitizer.

**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
Proprietary Solvent 1	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
Proprietary Solvent 2	11.5: 72 h Desmodemus 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
Proprietary Solvent 1	6.1
Proprietary Solvent 2	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

**DOT**

**Proper Shipping Name** NA 1993 Combustible liquid, n.o.s. (Naphthalene) 3, PG III, RQ (Trifluralin)  
**Hazard Class** 3  
**Packing Group** III  
**Reportable Quantity (RQ)** 10 lb.  
 If pack size over 119 Gallons (450 Liters): Marine Pollutant

**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*

**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

**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

**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
Proprietary Solvent 2		X	X

**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**

	<b>EPA</b>	<b>OSHA</b>
<b>Signal Word</b>	Caution	Danger
Acute toxicity - Oral	Harmful if swallowed	May be harmful if swallowed
Acute toxicity – Inhalation	N/A	Harmful if inhaled
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
Aspiration Hazard	N/A	May be fatal if swallowed and enters airways

**16. OTHER INFORMATION****NFPA****Health Hazards**

2

**Flammability**

1

**Instability**

0

**Special Hazards**

None

**HMIS****Health Hazards**

2

**Flammability**

1

**Physical Hazards**

0

**Personal Protection**

See section 8

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**Revision Note:**

Updated format from 06-Jan-2016

**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 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**