




Material Safety Data Sheet

NFPA	Transport Symbol
	

Preparation Date 08-Dec-2010

Revision Date 04-Nov-2011

Revision Number 2

1. PRODUCT AND COMPANY IDENTIFICATION

Product Code 2121001
Product Name ACETO TRIFLURALIN 4 EC HERBICIDE
Synonyms Benzenamine, 2,6-Dinitro-N,N-Dipropyl-4-(Trifluoromethyl)- (9CI); Alpha, Alpha, Alpha-Trifluoro-2,6-Dinitro-N,N-Dipropyl-P-Toluidine
Formula C₁₃H₁₆F₃N₃O₄
CAS Number 1582-09-8 + 91-20-3 + Other Ingredients
EPA Registration Number 2749-561
Contact
ACETO AGRICULTURAL
CHEMICALS CORP.
4 Tri Harbor Court
Port Washington, NY 11050-4661
Phone: (516) 627-6000
Fax: (516) 627-6093
Email: regulatory@aceto.com
ChemTrec Emergency Telephone Numbers 1-800-424-9300
1-703-527-3887

2. HAZARDS IDENTIFICATION

Emergency Overview

May be harmful by inhalation, in contact with skin and if swallowed. Irritating to eyes. May cause skin irritation. May cause irritation of the mucous membranes. May cause irritation of respiratory tract. May cause an allergic skin reaction. California Proposition 65 Carcinogens List. Limited evidence of a carcinogenic effect. Possible teratogen. (See section 11). Dangerous for the environment. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Appearance Orange.

Physical State Liquid.

Odor Solvent

OSHA Regulatory Status

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

2121001 - ACETO TRIFLURALIN 4 EC HERBICIDE

Mexico - Grade Not available

Potential Health Effects

Principle Routes of Exposure Eye contact, Skin contact.

Acute Effects

Eyes Irritating to eyes. May cause corneal injury. Redness. Avoid contact with eyes.

Skin May be harmful by skin contact. Substance may cause slight skin irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. Redness. May cause drying and flaking of the skin. Avoid contact with skin.

Inhalation May be harmful by inhalation. May cause irritation of the mucous membranes. May cause irritation of respiratory tract.

Ingestion May be harmful if swallowed. Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia. Do not ingest.

Additional Acute Effects None reasonably foreseeable.

Chronic Effects California Proposition 65 Carcinogens List. Limited evidence of a carcinogenic effect. Possible teratogen. (See Section 11). Avoid repeated exposure.

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions Not available

Interactions with Other Chemicals Not available

Potential Environmental Effects Dangerous for the environment. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS Number 1582-09-8 + 91-20-3 + Other Ingredients

Formula C₁₃H₁₆F₃N₃O₄

Hazardous Components

Chemical Name	CAS-No	Weight %
Trifluralin	1582-09-8	30 - 60
Naphthalene	91-20-3	5 - 10

Non-hazardous Components

Chemical Name	CAS-No	Weight %
Other Ingredients	N/A	30 - 60

4. FIRST AID MEASURES

General Advice	Show this safety data sheet to the doctor in attendance.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician or Poison Control Centre immediately.
Skin Contact	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. Call a physician or Poison Control Centre immediately.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a physician or Poison Control Centre immediately.
Ingestion	Do not induce vomiting without medical advice. Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Centre immediately.
Notes to Physician	Treat symptomatically
Protection of First-aiders	Use personal protective equipment. Avoid contact with skin, eyes and clothing.

5. FIRE-FIGHTING MEASURES

Flammable Properties	Not available
Suitable Extinguishing Media	Water spray. Carbon dioxide (CO ₂). Dry powder. Foam. Water mist may be used to cool closed containers. Do not use a solid water stream as it may scatter and spread fire.
Unsuitable Extinguishing Media	Do not use a solid water stream as it may scatter and spread fire.
Hazardous Combustion Products	Thermal decomposition or combustion may produce hazardous gases and/or materials.

Explosion Data

Sensitivity to mechanical impact Not available

Sensitivity to static discharge Not available

Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapours.

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

NFPA

Health 2

Flammability 1

Instability 1

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Evacuate personnel to safe areas. Use personal protective equipment. Avoid contact with skin, eyes and clothing. In case of insufficient ventilation, wear suitable respiratory equipment.
Environmental Precautions	Local authorities should be advised if significant spillages cannot be contained. Do not allow material to contaminate ground water system. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Should not be released into the environment.
Methods for Containment	Not available
Methods for Cleaning up	Evacuate personnel to safe areas. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly. Prevent product from entering drains.
Other Information	Not applicable

7. HANDLING AND STORAGE

Handling	Use only in an area equipped with a safety shower. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation. Avoid breathing vapors or mists. Avoid contact with skin, eyes and clothing. Avoid repeated exposure. In case of insufficient ventilation, wear suitable respiratory equipment.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labelled containers. Keep out of the reach of children.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	Ontario TWAEV	Mexico
Naphthalene	= 10 ppm TWA = 15 ppm STEL Skin - potential significant contribution to overall exposure by the cutaneous route	= 10 ppm TWA = 50 mg/m ³ TWA	= 15 ppm STEV = 78 mg/m ³ STEV = 10 ppm TWAEV = 52 mg/m ³ TWAEV	= 15 ppm STEL = 75 mg/m ³ STEL = 50 mg/m ³ TWA = 10 ppm TWA

Engineering Controls	Ensure adequate ventilation, especially in confined areas.
-----------------------------	--

Personal Protective Equipment

Eye/face Protection	Tightly fitting safety goggles.
----------------------------	---------------------------------

Skin Protection

Protective gloves. Avoid gloves made of Polyvinyl alcohol (PVA). Long sleeved clothing. Preferred glove barrier material include: Chlorinated polyethylene. Neoprene. Nitrile rubber. Butadiene rubber. Polyethylene. Ethyl vinyl alcohol laminate (EVAL). Polyvinyl chloride. Viton. Acceptable glove barrier material include: Butyl-rubber. Natural Rubber.

Respiratory Protection

In case of insufficient ventilation wear suitable respiratory equipment.

Chemical Name	NIOSH IDLH
Naphthalene	= 250 ppm IDLH

General Hygiene Considerations

General industrial hygiene practice. Contaminated work clothing should not be allowed out of the workplace. Avoid contact with skin, eyes and clothing. For environmental protection remove and wash all contaminated protective equipment before re-use. Wash hands before breaks and at the end of workday. For additional information consult the EPA Pesticide Label.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Orange
Physical State	Liquid
Odor	Solvent
pH	(Aqueous 50/50)5.0
Flash Point	99°C / 210°F
Method	Pensky-Marten ASTM D 93
Autoignition Temperature	Not available
Boiling Point/Range	(Literature solvent) 232 - 275°C / (Literature Solvent) 450 - 527°F
Melting Point/Range	Not available
Flammability Limits in Air	Lower 1.8% (Estimated Solvent) Upper 11.8% (Estimated Solvent)
Vapor Pressure	(Literature solvent)<1 hPa @ 20°C
Vapor Density	4.7 (Literature Solvent, relative to air)
Specific Gravity	1.117 (Literature)
Density	1.117 g/cm ³ (Literature, Liquid)
Water Solubility	Emulsifies
Reactivity in Water	Not available
Molecular Weight	335.279 (Technical)

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal conditions. Unstable at elevated temperatures.
Conditions to Avoid	Heat, flames and sparks. Elevated temperatures can cause material to decompose.
Incompatible Materials	Oxidizing agents.
Hazardous Decomposition Products	Carbon monoxide, Carbon dioxide (CO ₂), Nitrogen oxides (NO _x), Hydrogen fluoride, Fluorinated hydrocarbons.

Possibility of Hazardous Reactions

None under normal processing

11. TOXICOLOGICAL INFORMATION**Acute Toxicity****Product Information**

LD50 Oral: >5,000(male)/4,013(female) mg/kg (rat)
LD50 Dermal: > 2,000 mg/kg (rabbit) (male&female)
LC50 Inhalation: > 7.74mg/L mg/kg 4H (male & female)

Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Trifluralin	= 1930 mg/kg Oral LD50 Rat		= 2800 mg/m ³ Inhalation LC50 Rat 1 h
Naphthalene	= 490 mg/kg Oral LD50 Rat	> 20 g/kg Dermal LD50 Rabbit	> 340 mg/m ³ Inhalation LC50 Rat 1 h

Chronic Toxicity**Carcinogenicity**

A low incidence of urinary tract tumors was seen in only 1 of 5 chronic studies in rates with trifluralin (A.I.) Limited evidence of cancer in laboratory animals with Naphthalene. California Proposition 65 - Carcinogens List. [Naphthalene]. The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA	Mexico
Naphthalene	A4 - Not Classifiable as a Human Carcinogen	Monograph 82 [2002]	Reasonably Anticipated To Be A Human Carcinogen	Present	A4 - Not classifiable as a human carcinogen

Irritation

Not available

Corrosivity

Not available

Sensitization

May cause allergic skin reaction.

Neurological Effects

Not available

Mutagenic Effects

Not available

Reproductive Effects

Not available

Developmental Effects

The A.I. (Trifluralin) has been toxic to the fetus in laboratory animals at doses toxic to the mother.

Target Organ Effects

Liver, Kidney, Blood, [Active Ingredient], //, Lungs, Gastrointestinal tract (GI), Thyroid, Urinary Tract.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Dangerous for the environment. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Trifluralin

Water Flea Data

48 Hr EC50 water flea: 0.56 mg/L [Static]; 48 Hr EC50 *Daphnia pulex*: 0.56 mg/L [Static]

Naphthalene

Freshwater Algae Data

96 Hr EC50 *Skeletonema costatum*: 0.4 mg/L

Microtox Data

= 0.93 mg/L EC50 *Photobacterium phosphoreum* 30 min

> 20 mg/L EC50 *Pseudomonas putida* 18 h

Water Flea Data

48 Hr EC50 water flea: 2.16 mg/L

Persistence / Degradability

Not available

Bioaccumulation / Accumulation

Not available

Mobility in Soil

Not available

Naphthalene

log Pow = = 3.3 20 °C

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method

Contact waste disposal services. Dispose of in accordance with local regulations. Dispose of in accordance to EPA Pesticide Label Instructions.

Contaminated Packaging

Dispose of in accordance with local regulations. Empty containers should be taken for local recycling, recovery or waste disposal. Dispose of in accordance to EPA Pesticide Label Instructions.

US EPA Waste Number

See below

Chemical Name	RCRA
Naphthalene - 91-20-3	waste number U165

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name

Environmentally hazardous substance, liquid, n.o.s

2121001 - ACETO TRIFLURALIN 4 EC HERBICIDE

Hazard Class	9
UN-No	UN3082
Packing Group	III
Reportable Quantity (RQ)	Trifluralin, RQ kg = 10.55814 Naphthalene, RQ kg = 648.5714
Description	UN3082,Environmentally hazardous substance, liquid, n.o.s.(Trifluralin,Naphthalene),9,PG III,RQ
TDG	
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s
Hazard Class	9
UN-No	UN3082
Packing Group	III
Description	UN3082,Environmentally hazardous substance, liquid, n.o.s.(Trifluralin,Naphthalene),9,PG III,RQ
MEX	
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s
Hazard Class	9
UN-No	UN3082
Packing Group	III
Description	UN3082,Environmentally hazardous substance, liquid, n.o.s.(Trifluralin,Naphthalene),9,III
ICAO	
UN-No	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s
Hazard Class	9
Packing Group	III
Description	UN3082,Environmentally hazardous substance, liquid, n.o.s.*(Trifluralin,Naphthalene),9,PG III
IATA	
UN-No	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s
Hazard Class	9
Packing Group	III
ERG Code	9L
Description	UN3082,Environmentally hazardous substance, liquid, n.o.s.*(Trifluralin,Naphthalene),9,PG III
IMDG/IMO	
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s
Hazard Class	9
UN-No	UN3082
Packing Group	III
EmS No.	F-A, S-F
Description	UN3082,Environmentally hazardous substance, liquid, n.o.s.(Trifluralin,Naphthalene),9,PG III
RID	
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s
Hazard Class	9

2121001 - ACETO TRIFLURALIN 4 EC HERBICIDE

UN-No UN3082
Packing Group III
Classification Code M6
Description UN3082,Environmentally hazardous substance, liquid, n.o.s.(Trifluralin,Naphthalene),9,III,RID
ADR/RID-Labels 9

ADR

Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s
Hazard Class 9
UN-No UN3082
Packing Group III
Classification Code M6
Description UN3082,Environmentally hazardous substance, liquid, n.o.s.(Trifluralin,Naphthalene),9,III,ADR
ADR/RID-Labels 9

ADN

Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s
Hazard Class 9
UN-No UN3082
Packing Group III
Classification Code M6
Special Provisions 274, 601
Description UN3082,Environmentally hazardous substance, liquid, n.o.s.(Trifluralin,Naphthalene),9,III
Hazard Labels 9
Limited Quantity LQ7
Equipment Requirements PP

15. REGULATORY INFORMATION

International Inventories

U.S.A. (TSCA) Does not Comply
Canada (DSL) Does not Comply
EU (ELINCS) Does not Comply
EU (EINECS) Does not Comply
Japan (ENCS) Does not Comply
China Does not Comply
Korea (KECL) Does not Comply
Philippines (PICCS) Does not Comply
Australia (AICS) Does not Comply

Chemical Name	U.S.A. (TSCA)	Canada (DSL)	EU (EINECS)	EU (ELINCS)
Trifluralin	-	Present	216-428-8	-
Naphthalene	T	Present	202-049-5	-
Other Ingredients	-	-	-	-

Chemical Name	Japan (ENCS)	China	Korea (KECL)	Philippines (PICCS)	Australia (AICS)
Trifluralin	3-426 3-0426	Present	KE-11942	-	Present
Naphthalene	4-311 4-0311	Present	KE-25545	Present	Present

2121001 - ACETO TRIFLURALIN 4 EC HERBICIDE

Chemical Name	Japan (ENCS)	China	Korea (KECL)	Philippines (PICCS)	Australia (AICS)
Other Ingredients	-	-	-	-	-

This material as a whole is exempt from the TSCA Inventory // FIFRA Regulated Pesticide

USA**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

Trifluralin (CAS #: 1582-09-8)

Naphthalene (CAS #: 91-20-3)

SARA 311/312 Hazardous Categorization

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

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product contains the following HAPs:

Chemical Name

Trifluralin (CAS #: 1582-09-8)

Naphthalene (CAS #: 91-20-3)

Chemical Name

Trifluralin

EPA: CERCLA RQ

= 10 lb final RQ

= 4.54 kg final RQ

Naphthalene

= 45.4 kg final RQ

Chemical Name

Naphthalene

TSCA Listing

Section 4, 0.1 % de minimus concentration

40 CFR 799.5115

State Regulations**California Proposition 65**

This product contains the following Proposition 65 chemicals:

Chemical Name	CAS-No	Category	Type
Naphthalene	91-20-3	carcinogen, initial date 4/19/02	carcinogen, initial date 4/19/02

State Right-to-Know

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Trifluralin	Carcinogen; Extraordinarily hazardous	sn 1918	Environmental hazard	Present	
Naphthalene	Present	sn 1322	Environmental hazard	Present	Toxic; Flammable

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

Not determined

16. OTHER INFORMATION

Prepared By	Environmental Health and Safety, Regulatory Affairs
Preparation Date	08-Dec-2010
Revision Date	04-Nov-2011
Revision Summary	Not available

Disclaimer

The information provided on this MSDS 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of MSDS