




Material Safety Data Sheet

NFPA	Transport Symbol
	

Preparation Date 09-Mar-2011

Revision Date 20-Apr-2011

Revision Number 2

1. PRODUCT AND COMPANY IDENTIFICATION

Product Code 2120901
Product Name BIFENTHRIN 2 EC
Synonyms (2-Methyl[1,1'-Biphenyl]-3-Yl) Methyl 3-(2-Chloro-3,3,3-Trifluoro-1-Propenyl)2,2-Dimethyl-Cyclopropanecarboxylate {cis and trans isomers possible}
Formula C23H22ClF3O2
CAS Number 82657-04-3
EPA Registration Number 2749-556
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

Flammable Liquid. Toxic. May be fatal if swallowed. Toxic by inhalation. Toxic in contact with skin. Irritating to eyes. May cause skin irritation. May cause irritation of respiratory tract. May cause irritation of the mucous membranes. May cause an allergic skin reaction. Marine pollutant. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Appearance Amber, to, Yellow.

Physical State Liquid.

Odor Aromatic, Hydrocarbons

OSHA Regulatory Status

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

Mexico - Grade

Not available

Potential Health Effects

Principle Routes of Exposure Eye contact, Skin contact, Inhalation, Ingestion.

Acute Effects

Eyes Irritating to eyes. Avoid contact with eyes.

Skin Toxic in contact with skin. Substance may cause slight skin irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. Erythema. Avoid contact with skin.

Inhalation Toxic by inhalation. May cause irritation of the mucous membranes. May cause irritation of respiratory tract. Choking may be caused. Coughing. Inhalation may cause tachypnea, dyspnea, cyanosis, rales, hemoptysis, pulmonary edema, pneumatoceles, lipid pneumonia, or respiratory arrest may develop following ingestion and aspiration.

Ingestion Toxic if swallowed. May be fatal if swallowed. May cause nausea, vomiting and diarrhea. Abdominal pain.

Additional Acute Effects

Signs of toxicity in laboratory animals included tremors, convulsions, ataxia, decreased locomotion and nasal discharge. Bifenthrin Technical does not cause acute delayed neurotoxicity. Contact with Bifenthrin products may occasionally produce skin sensations, such as rashes, numbing, burning or tingling, which are reversible and usually subside with 12 hours. Inhalation of aromatic hydrocarbon vapors may cause dizziness, disturbances in vision, drowsiness, respiratory irritation, and eye, skin and mucous membrane irritation. Vomiting after ingestion of this product may cause aspiration of aromatic hydrocarbons into the lungs which may result in fatal pulmonary edema.

Chronic Effects

No data are available for this formulated product. In studies with laboratory animals, Bifenthrin Technical did not cause reproductive toxicity or teratogenicity. Tremors were associated with repeated exposure of laboratory animals to Bifenthrin Technical. In lifetime feeding studies conducted with rodents, a slight increase in the incidence of urinary bladder tumors at the highest dose in male mice was considered to be an equivocal response, not evidence of a clear compound-related effect. The overall absence of genotoxicity has been demonstrated in mutagenicity tests with Bifenthrin. Chronic exposure to aromatic hydrocarbons may cause headaches, loss of sensations or feelings (such as numbness), and liver and kidney damage. Avoid repeated exposure.

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions Not available

Interactions with Other Chemicals Not available

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS Number 82657-04-3
Formula C₂₃H₂₂ClF₃O₂

Hazardous Components

Chemical Name	CAS-No	Weight %
Bifenthrin Technical	82657-04-3	25
Aromatic solvent	64742-95-6	40

Non-hazardous Components

Chemical Name	CAS-No	Weight %
C16-C18 and C18 Unsaturated Alkylcarboxylic Acid Methyl Ester	67762-38-3	25
Other Ingredients	N/A	10

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. 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 Remove all sources of ignition. Use personal protective equipment. Avoid contact with skin, eyes and clothing.

5. FIRE-FIGHTING MEASURES

Flammable Properties Flammable liquid. Vapors may cause flash fire or explosion.

Suitable Extinguishing Media Water spray. Carbon dioxide (CO₂). Dry powder. Foam.

Unsuitable Extinguishing Media Not available

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. Flash back possible over considerable distance.

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 2****Instability 0****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. Remove all sources of ignition. Take precautionary measures against static discharges. Pay attention to flashback.

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. Clean contaminated surface thoroughly. Prevent product from entering drains. Use spark-proof tools and explosion-proof equipment. Ground and bond containers when transferring material.

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. Keep away from open flames, hot surfaces and sources of ignition. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). 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 away from open flames, hot surfaces and sources of ignition. Keep in properly labelled containers. Keep out of the reach of children. Keep at temperatures above 4°C.
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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Engineering Controls Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/face Protection	Tightly fitting safety goggles.
Skin Protection	Protective gloves. Long sleeved clothing.
Respiratory Protection	In case of insufficient ventilation wear suitable respiratory equipment.

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Amber, to, Yellow	
Physical State	Liquid	
Odor	Aromatic, Hydrocarbons	
pH	Not available	
Flash Point	54°C	
Autoignition Temperature	Not available	
Boiling Point/Range	Not available	
Melting Point/Range	Not available	
Flammability Limits in Air	Lower Not available	Upper Not available
Vapor Pressure	Not available	
Vapor Density	Not available	
Specific Gravity	0.94 - 0.96 @ 20°C	
Density	7.8 - 8.0 lb/gal (940 - 960 g/L)	
Water Solubility	Emulsifiable	
Reactivity in Water	Not available	
Partition Coefficient (n-octanol/water)	log Pow:>6 (Bifenthrin)	
Molecular Weight	422.87 (Bifenthrin)	

10. STABILITY AND REACTIVITY

Chemical Stability Stable under normal conditions.

Conditions to Avoid	Keep away from open flames, hot surfaces and sources of ignition.
Incompatible Materials	Strong oxidizing agents. (Bifenthrin Technical).
Hazardous Decomposition Products	Carbon monoxide, Carbon dioxide (CO ₂), Hydrogen chloride gas, Hydrogen fluoride.
Possibility of Hazardous Reactions	None under normal processing

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information

LD50 Oral:	262 mg/kg (rat)
LD50 Dermal:	> 2,000 mg/kg (rabbit)
LC50 Inhalation:	1.86mg/L 4H (rat)

Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Bifenthrin Technical	= 54.5 mg/kg Oral LD50 Rat	> 2 g/kg Dermal LD50 Rabbit	
Aromatic solvent	= 8400 mg/kg Oral LD50 Rat	> 2000 mg/kg Dermal LD50 Rabbit	= 3400 ppm Inhalation LC50 Rat 4 h > 5.2 mg/L Inhalation LC50 Rat 4 h
C16-C18 and C18 Unsaturated Alkylcarboxylic Acid Methyl Ester	> 2000 mg/kg Oral LD50 Rat		

Chronic Toxicity

Carcinogenicity	There are no known carcinogenic chemicals in this product
Irritation	Not available
Corrosivity	Not available
Sensitization	May cause sensitization of susceptible persons by skin contact.
Neurological Effects	Not available
Mutagenic Effects	Not available
Reproductive Effects	Not available
Developmental Effects	Not available
Target Organ Effects	Not available

12. ECOLOGICAL INFORMATION

Ecotoxicity

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

Bifenthrin Technical

Water Flea Data

48 Hr EC50 water flea: 0.0015 mg/L

Aromatic solvent

Water Flea Data

48 Hr EC50 *Daphnia magna*: 6.14 mg/L

Persistence / Degradability Not available

Bioaccumulation / Accumulation Not available

Mobility in Soil Not available

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method Contact waste disposal services. Dispose of in accordance with local regulations.

Contaminated Packaging Dispose of in accordance with local regulations. Empty containers should be taken for local recycling, recovery or waste disposal.

US EPA Waste Number Not available

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name	Pyrethroid pesticide, liquid, toxic, flammable
Hazard Class	6.1
Subsidiary Class	3
UN-No	UN3351
Packing Group	III
Marine Pollutant	This product contains a chemical which is listed as a marine pollutant according to DOT.
Description	UN3551, Pyrethroid pesticide, liquid, toxic, flammable, (Contains Bifenthrin 25.1%, Xylene), 6.1, (3), PG III, Marine Pollutant

TDG

Proper Shipping Name	Pyrethroid pesticide, liquid, toxic, flammable
Hazard Class	6.1
Subsidiary Class	3

UN-No	UN3351
Packing Group	III
Marine Pollutant	This product contains a chemical which is listed as a marine pollutant according to TDG.
Description	UN3351,PYRETHROID PESTICIDE, LIQUID, TOXIC, FLAMMABLE,(Contains Bifenthrin 25.1%, Xylene),6.1,(3),PG III, Marine Pollutant
MEX	
Proper Shipping Name	Pyrethroid pesticide, liquid, toxic, flammable
Hazard Class	6.1
Subsidiary Class	3
UN-No	UN3351
Packing Group	III
Description	UN3351 Pyrethroid pesticide, liquid, toxic, flammable, (Contains Bifenthrin 25.1%, Xylene),6.1,(3), PG III, Marine Pollutant
ICAO	
UN-No	UN3351
Proper Shipping Name	Pyrethroid pesticide, liquid, toxic, flammable*
Hazard Class	6.1
Subsidiary Class	3
Packing Group	III
Description	UN3351,Pyrethroid pesticide, liquid, toxic, flammable*,(Contains Bifenthrin 25.1%, Xylene),6.1,(3), PG III, Marine Pollutant
IATA	
UN-No	UN3351
Proper Shipping Name	Pyrethroid pesticide, liquid, toxic, flammable*
Hazard Class	6.1
Subsidiary Class	3
Packing Group	III
ERG Code	6F
Description	UN3351,Pyrethroid pesticide, liquid, toxic, flammable*,(Contains Bifenthrin 25.1%, Xylene), 6.1,(3),PG III, Marine Pollutant
IMDG/IMO	
Proper Shipping Name	Pyrethroid pesticide, liquid,toxic, flammable
Hazard Class	6.1
Subsidiary Class	3
UN-No	UN3351
Packing Group	III
EmS No.	F-E, S-D
Marine Pollutant	This product contains a chemical which is listed as a marine pollutant according to IMDG/IMO
Description	UN3351, Pyrethroid pesticide, liquid, toxic, flammable,(Contains Bifenthrin 25.1%, Xylene),6.1,(3),PG III, Marine Pollutant
RID	
Proper Shipping Name	Pyrethroid pesticide, liquid, toxic, flammable
Hazard Class	6.1
UN-No	UN3351
Packing Group	III

Classification Code	TF2
Description	UN3351 Pyrethroid pesticide, liquid, toxic, flammable, (Contains Bifenthrin 25.1%, Xylene), 6.1, (3), PG III, RID, Marine Pollutant
ADR/RID-Labels	6.1 + 3

ADR

Proper Shipping Name	Pyrethroid pesticide, liquid, toxic, flammable
Hazard Class	6.1
UN-No	UN3351
Packing Group	III
Classification Code	TF2
Description	UN3351 Pyrethroid pesticide, liquid, toxic, flammable, (Contains Bifenthrin 25.1%, Xylene), 6.1, (3), PG III, ADR, Marine Pollutant
ADR/RID-Labels	6.1 + 3

ADN

Proper Shipping Name	Pyrethroid pesticide, liquid, toxic, flammable
Hazard Class	6.1
UN-No	UN3351
Packing Group	III
Classification Code	TF2
Special Provisions	61, 802
Description	UN3351 Pyrethroid pesticide, liquid, toxic, flammable, (Contains Bifenthrin 25.1%, Xylene), 6.1, (3), PG III, Marine Pollutant
Hazard Labels	6.1 + 3
Limited Quantity	LQ7
Ventilation	VE01, VE02
Equipment Requirements	PP, EP, EX, TOX, A

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)
Bifenthrin Technical	-	-	-	-
Aromatic solvent	Present	Present	265-199-0	-
C16-C18 and C18 Unsaturated Alkylcarboxylic Acid Methyl Ester	Present	Present	267-015-4	-
Other Ingredients	-	-	-	-

Chemical Name	Japan (ENCS)	China	Korea (KECL)	Philippines (PICCS)	Australia (AICS)
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Chemical Name	Japan (ENCS)	China	Korea (KECL)	Philippines (PICCS)	Australia (AICS)
Bifenthrin Technical	4-1701 4-1701	Present	KE-05935	-	-
Aromatic solvent	-	Present	KE-31662	Present	Present
C16-C18 and C18 Unsaturated Alkylcarboxylic Acid Methyl Ester	7-670 7-0670	Present	KE-14358	Present	Present
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

Bifenthrin Technical (CAS #: 82657-04-3)

SARA 311/312 Hazardous Categorization

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

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

This product does not contain any HAPs.

State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

State Right-to-Know

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Bifenthrin Technical		sn 3194			

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	09-Mar-2011
Revision Date	20-Apr-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