



SAFETY DATA SHEET

1. Identification

Product identifier	Discipline® 2 EC
Other means of identification	
SDS number	502
Recommended use	Pyrethroid type insecticide/miticide.
Recommended restrictions	This is a Restricted Use Pesticide and is for use by licensed applicators only. Keep out of the Reach of Children!
EPA Registration number	EPA: 5481-517
Manufacturer/Importer/Supplier/Distributor information	
Manufacturer	
Company name	AMVAC Chemical Corporation
Address	4100 E Washington Blvd Los Angeles, CA 90023 USA
Telephone	AMVAC Chemical Corp 323-264-3910 AMVAC Chemical Corp 323-268-1028 (FAX)
Website	www.Amvac-Chemical.com
E-mail	CustServ@Amvac-Chemical.com
Emergency phone number	Medical 888-681-4261 CHEMTREC® 800-424-9300 (USA+Canada) Product Use 888-462-6822 CHEMTREC® (Outside USA) +1-703-527-3887

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 4
Health hazards	Acute toxicity, oral	Category 3
	Acute toxicity, inhalation	Category 4
	Germ cell mutagenicity	Category 1B
	Specific target organ toxicity, repeated exposure	Category 1 (nervous system)
	Aspiration hazard	Category 1
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	
Label elements		



Signal word	Danger
Hazard statement	Combustible liquid. Toxic if swallowed. Harmful if inhaled. May cause an allergic skin reaction. May cause genetic defects. Causes damage to organs through prolonged or repeated exposure.

Precautionary statement

Prevention

Do not handle until all safety precautions have been read and understood.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Do not breathe mist or vapor.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing must not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.

Response

If swallowed: Immediately call a poison center/doctor.
Rinse mouth.
Immediately call a poison center/doctor.
If on skin: Wash with plenty of water.
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
In case of fire: Use appropriate media to extinguish.
Collect spillage.

Storage

Store in a well-ventilated place. Keep container tightly closed.
Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)

Very toxic to aquatic life.
Very toxic to aquatic life with long lasting effects.

Supplemental information

None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Bifenthrin	Cyclopropanecarboxylic acid, 3-[(1Z)-2-chloro-3,3,3-trifluoro-1-propenyl]-2,2-dimethyl-, (2-methyl[1,1'-biphenyl]-3-yl)methyl ester, (1R,3R)-rel-	82657-04-3	25.1 %
Solvent naphtha (petroleum), heavy arom.		64742-94-5	50-70 %

Additional components

Chemical name	Common name and synonyms	CAS number	%
Other compounds			5 - 20 %

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician or poison control center immediately.

Skin contact

Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.

Eye contact

Rinse with water. Get medical attention if irritation develops and persists.

Ingestion

Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Never give anything by mouth to a victim who is unconscious or is having convulsions.

Most important symptoms/effects, acute and delayed

Direct contact with eyes may cause temporary irritation. May cause an allergic skin reaction. Dermatitis. Rash. Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed

Bifenthrin is moderately toxic if swallowed and has a low dermal toxicity. Gastric lavage using an endotracheal tube may be preferred to vomiting. Reversible skin sensations (paresthesia) may occur and ordinary skin salves have been found useful in reducing discomfort. This product contains aromatic hydrocarbons. Because of the risk of hydrocarbon pneumonic if even tiny amounts are aspirated into the lung during emesis, consideration should be given to gastric lavage with endotracheal tube in place. Provide general supportive measures and treat symptomatically.

General information IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical The product is combustible, and heating may generate vapors which may form explosive vapor/air mixtures. During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards Combustible liquid.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe vapors or spray mist. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Prevent entry into waterways, sewer, basements or confined areas. Siphon the majority of the liquid into drums for use or disposal, depending on the circumstances. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Clean surface thoroughly to remove residual contamination.

Environmental precautions Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.

7. Handling and storage

Precautions for safe handling Do not handle until all safety precautions have been read and understood. Keep away from open flames, hot surfaces and sources of ignition. Do not breathe vapors or spray mist. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities Store locked up. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Solvent naphtha (petroleum), heavy arom. (CAS 64742-94-5)	PEL	400 mg/m ³

Additional components

Additional components	Type	Value
Naphthalene (CAS 91-20-3)	PEL	50 mg/m ³
		10 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Solvent naphtha (petroleum), heavy arom. (CAS 64742-94-5)	TWA	200 mg/m ³	Non-aerosol.

US. ACGIH Threshold Limit Values

Additional components	Type	Value
1,2, 4-Trimethylbenzene (CAS 95-63-6)	TWA	25 ppm
2-Methylnaphthalene (CAS 91-57-6)	TWA	0.5 ppm
Naphthalene (CAS 91-20-3)	TWA	10 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Additional components	Type	Value
1,2, 4-Trimethylbenzene (CAS 95-63-6)	TWA	125 mg/m3 25 ppm
Naphthalene (CAS 91-20-3)	STEL	75 mg/m3 15 ppm
	TWA	50 mg/m3 10 ppm

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines**US - California OELs: Skin designation**

Naphthalene (CAS 91-20-3) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

2-Methylnaphthalene (CAS 91-57-6) Can be absorbed through the skin.

Naphthalene (CAS 91-20-3) Can be absorbed through the skin.

Solvent naphtha (petroleum), heavy arom. (CAS 64742-94-5) Can be absorbed through the skin.

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Wear safety glasses with side shields (or goggles). If there is a potential for splashing Goggles or a full face shield should be used.

Skin protection**Hand protection**

Wear appropriate chemical resistant gloves.

Other

The following clothing is required: overalls or pants and long-sleeved shirt, chemical resistant gloves (preferably nitrile), chemical resistant boots. For added protection a chemical resistant apron and a full face shield are recommended. If there is a risk of splashing, misting or release the following additional PPE is required: two piece hooded chemical resistant suit with either a full face respirator or a SCBA. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions are available, use detergent and hot water. Keep and wash PPE separately. When cleaning up a large spill wear appropriate chemical resistant clothing (see label).

Respiratory protection

Avoid breathing dust/fume/gas/mist/vapors/spray. If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

Thermal hazards

Not applicable.

General hygiene considerations

When using do not smoke. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance	Amber to dark liquid
Physical state	Liquid.
Form	Liquid.
Color	Amber to dark

Odor	Solvent odor
Odor threshold	None established
pH	7 (5% emulsion)
Melting point/freezing point	< 32 °F (< 0 °C)
Initial boiling point and boiling range	> 354 °F (> 179 °C)
Flash point	159 °F (71 °C) Pensky-Martens Closed Cup
Evaporation rate	0.1 as compared to n-Butyl acetate
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	0.7 % estimated
Flammability limit - upper (%)	5 % estimated
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	2.08E+00 mm Hg approx. @ 68°F
Vapor density	Heavier than air
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Emulsifiable
Solubility (solvents)	This product is soluble in aromatic solvents
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Bulk density	8.26 lb/gal
Percent volatile	68 %
Specific gravity	0.99 @ 20°C

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	This product may emit hazardous fumes of hydrogen chloride, carbon oxides, and unidentified organic compounds when it is heated excessively or burned. WEAR SELF-CONTAINED BREATHING APPARATUS when these conditions are present.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Harmful if inhaled. May cause damage to organs through prolonged or repeated exposure by inhalation. May be fatal if swallowed and enters airways.
Skin contact	May cause an allergic skin reaction.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Toxic if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics Contact with Bifenthrin may occasionally produce skin sensitization such as rashes, numbing, burning or tingling. The presence of petroleum distillates may lead to central nervous system (CNS) depression, drying of the skin, dermatitis. Aspiration (breathing) of vomitus after swallowing may lead to aspiration pneumonitis. May cause an allergic skin reaction.

Information on toxicological effects

Acute toxicity	Toxic if swallowed. Harmful if inhaled. May be fatal if swallowed and enters airways. May cause an allergic skin reaction.
Skin corrosion/irritation	Not irritating to skin.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	May cause an allergic skin reaction.
Germ cell mutagenicity	May cause genetic defects.
Carcinogenicity	Not expected to be carcinogenic based on GHS classification criteria.

IARC Monographs. Overall Evaluation of Carcinogenicity

Naphthalene (CAS 91-20-3) 2B Possibly carcinogenic to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Naphthalene (CAS 91-20-3) Reasonably Anticipated to be a Human Carcinogen.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	If aspirated into lungs during swallowing or vomiting, may cause chemical pneumonia, pulmonary injury or death.
Chronic effects	Causes damage to organs through prolonged or repeated exposure.

12. Ecological information

Ecotoxicity Very toxic to aquatic life with long lasting effects.

Components	Species		Test Results
Bifenthrin (CAS 82657-04-3)			
Aquatic			
Crustacea	LC50	Water flea (Ceriodaphnia dubia)	0 - 0.0002 mg/l, 48 hours
		Water flea (Daphnia magna)	0.0001 - 0.0009 mg/l, 48 hours
Solvent naphtha (petroleum), heavy arom. (CAS 64742-94-5)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia pulex)	2.7 - 5.1 mg/l, 48 hours
Fish	LC50	Rainbow trout, donaldson trout	8.8 mg/l, 96 hours
		(Oncorhynchus mykiss)	8.8 mg/l, 96 hours

Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	
Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

US RCRA Hazardous Waste U List: Reference

Naphthalene (CAS 91-20-3) U165

Waste from residues / unused products

Dispose of in accordance with all applicable regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal methods/information).

Contaminated packaging

Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN3352
UN proper shipping name	Pyrethroid pesticide, liquid toxic (Bifenthrin)
Transport hazard class(es)	
Class	6.1(PGIII)
Subsidiary risk	-
Label(s)	6.1
Packing group	III
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB3, T7, TP2, TP28
Packaging exceptions	153
Packaging non bulk	213
Packaging bulk	240

IATA

UN number	UN3352
UN proper shipping name	Pyrethroid pesticide, liquid toxic (Bifenthrin)
Transport hazard class(es)	
Class	6.1(PGIII)
Subsidiary risk	-
Label(s)	6.1
Packing group	III
Environmental hazards	Yes, when shipped over large bodies of water
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.
Read safety instructions, SDS and emergency procedures before handling.	

IMDG

UN number	UN3352
UN proper shipping name	Pyrethroid pesticide, liquid toxic (Bifenthrin), MARINE POLLUTANT
Transport hazard class(es)	
Class	6.1(PGIII)
Subsidiary risk	-
Label(s)	6.1
Packing group	III
Environmental hazards	
Marine pollutant	Yes
EmS	Not available.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

DOT



IATA; IMDG



Marine pollutant



General information

IMDG Regulated Marine Pollutant.

15. Regulatory information

US federal regulations

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

This product is registered under EPA/FIFRA Regulations as a RESTRICTED USE PESTICIDE. It is a violation of Federal Law to use this product in any manner inconsistent with its labeling. Read and follow all label directions. This product is excluded from listing requirements under EPA/TSCA.

This chemical is a pesticide product registered by the United States 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 (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

HAZARD TO HUMANS AND DOMESTIC ANIMALS.

WARNING: May be fatal if swallowed. Harmful if inhaled or absorbed through skin. Causes moderate eye irritation. Avoid breathing vapor or spray mist. Avoid contact with eyes, skin, and clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum using tobacco, or using the toilet.. Remove and wash contaminated clothing before reuse.

ENVIRONMENTAL HAZARDS

This pesticide is extremely toxic to fish, aquatic invertebrates, birds and mammals. Use with care when applying in areas adjacent to any body of water. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Keep out of lakes, ponds, and streams. Do not contaminate water when disposing of equipment washwater or rinsate.

This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. See the label for more complete information.

The use of bifenthrin is prohibited in areas that may result in exposure of endangered species to bifenthrin. Prior to use in a particular county contact the local extension service for procedures and precautions to use to protect endangered species.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Naphthalene (CAS 91-20-3)

Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Bifenthrin	82657-04-3	25.1 %

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

2-Methylnaphthalene (CAS 91-57-6)

Naphthalene (CAS 91-20-3)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Naphthalene (CAS 91-20-3)

Listed: April 19, 2002

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

1,2, 4-Trimethylbenzene (CAS 95-63-6)

2-Methylnaphthalene (CAS 91-57-6)

Naphthalene (CAS 91-20-3)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date Jan-20-2016

Revision date Sep-20-2017

References ACGIH®: American Conference of Governmental Industrial Hygienists
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act
EPA: Environmental Protection Agency
FIFRA: Federal Insecticide, Fungicide, and Rodenticide Act
IARC: International Agency for Research on Cancer
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Agency
SARA: Superfund Amendments and Reauthorization Act
TSCA: Toxic Substances Control Act
DOT: Department of Transportation
IMDG: International Maritime Dangerous Goods
IATA: International Air Transport Association

Version # 3.0

Further information Not available.

HMIS® ratings Health: 2
Flammability: 1
Physical hazard: 0

NFPA ratings

Health: 2
Flammability: 1
Instability: 0

Disclaimer

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Revision information

This document has undergone significant changes and should be reviewed in its entirety.