

MATERIAL SAFETY DATA SHEET

1 PRODUCT AND COMPANY IDENTIFICATION

Product name: PESGUARD ALPHA 5FL

Synonyms, Trade Names: Esfenvalerate 5% FL

Limitation on use: Public hygiene insecticide

Supplier:

Company Name: SUMITOMO CHEMICAL COMPANY, LIMITED
Contact Department / Section: Environmental Health Division Marketing Dept.- International
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 Middle East/Africa (Arabic speaking countries): +44-1235-239-671 (CARECHEM24, UK)
 USA (Domestic call): +1-800-424-9300 (CHEMTREC, USA)
 USA (International call; collect calls accepted): +1-703-527-3887 (CHEMTREC, USA)

2 HAZARDS IDENTIFICATION

GHS classification:

Physical hazards	Explosives	Not applicable
	Flammable gases	Not applicable
	Flammable aerosols	Not applicable
	Oxidizing gases	Not applicable
	Gases under pressure	Not applicable
	Flammable liquids	Not classified
	Flammable solids	Not applicable
	Self-reactive substances and mixtures	Not applicable
	Pyrophoric liquids	Not classified
	Pyrophoric solids	Not applicable
	Self-heating substances and mixtures	Classification not possible
	Substances and mixtures, which in contact with water, emit flammable gases	Not classified
	Oxidizing liquids	Classification not possible
	Oxidizing solids	Not applicable
	Organic peroxides	Not applicable
	Corrosive to metals	Classification not possible
Health hazards	Acute toxicity (Oral)	Category 4
	Acute toxicity (Dermal)	Not classified
	Acute toxicity (Inhalation - gas)	Not applicable
	Acute toxicity (Inhalation - vapour)	Classification not possible
	Acute toxicity (Inhalation - dust and mist)	Classification not possible
	Skin corrosion/irritation	Not classified
	Serious eye damage/eye irritation	Not classified

	Respiratory sensitizer	Classification not possible
	Skin sensitizer	Not classified
	Germ cell mutagenicity	Classification not possible
	Carcinogenicity	Classification not possible
	Toxic to reproduction	Classification not possible
	Specific target organ toxicity - single exposure	Category 1 (Central Nervous System)
	Specific target organ toxicity - repeated exposure	Category 2 (Nervous System, Kidneys, Blood)
	Aspiration hazard	Classification not possible
Environmental hazards	Acute hazards to the aquatic environment	Category 1
	Chronic hazards to the aquatic environment	Category 1
	Hazardous to the ozone layer	Classification not possible

GHS label elements

Symbol(s):



Signal words: Danger

Hazard Statement(s): H302: Harmful if swallowed.
H370: Causes damage to Central Nervous System.
H373: May cause damage to Nervous System, Kidneys and Blood through prolonged or repeated exposure.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention: P270: Do not eat, drink or smoke when using this product.
P260: Do not breathe dust/fume/gas/mist/vapours/spray.
P273: Avoid release to the environment.
P264: Wash face and hands thoroughly after handling.

Response: P391: Collect spillage.
P330: Rinse mouth.
P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P314: Get medical advice/attention if you feel unwell.
P321: Specific treatment (See "4. First-aid measure").

Storage: P405: Store locked up.

Disposal: P501: Dispose of contents/container appropriately in accordance with local/regional/national/international regulations.

3 COMPOSITION / INFORMATION ON INGREDIENTS

Substance or Preparation: Mixture

Chemical name	CAS-No.	Concentration
(S)- α -cyano-3-phenoxybenzyl (S)-2-(4-chlorophenyl)-3-methylbutyrate (ISO common name:esfenvalerate)	66230-04-4	5.0%
Solvent	—	balance
Others	—	15%

4 FIRST AID MEASURES

- Inhalation:** Remove victim to fresh air and keep at rest in a position comfortable for breathing. Administer oxygen if breathing is difficult. Apply artificial respiration if victim is not breathing. Do not use mouth-to-mouth method. Keep victim warm with a blanket etc. Get immediate medical advice/attention. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Effect of exposure to substance may be delayed. Medical observation is indicated.
- Skin contact:** Remove/Take off immediately contaminated clothing and shoes. Gently wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.
- Eye contact:** Do not rub eye. Hold eyelids apart. Begin to rinse with water as soon as possible and rinse cautiously for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.
- Ingestion** Rinse mouth. Do not give victim anything to drink if he is unconscious. Try to induce vomiting by having affected person touch back of the throat with his finger or by giving him syrup of ipecac as directed on the package. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Keep victim warm with a blanket etc. Get immediate medical advice/attention. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Administer oxygen if breathing is difficult. Apply artificial respiration if victim is not breathing. Effect of exposure to substance may be delayed. Medical observation is indicated.
- Personal Protection for First-aid Responders:** Use personal protective equipment as required.
- Notes to the physician:** Phenobarbital treatment may be effective to convulsion in the setting of acute poisoning, as palliative treatment. Published data indicate vitamin E treatment is effective to skin paresthesia.

5 FIRE-FIGHTING MEASURES

- Extinguishing media:** Small fires: dry chemical powder, carbon dioxide, water spray
Large fires: water spray, fog
- Unsuitable extinguishing media:** High pressure water streams
- Unusual Fire & Explosion Hazards:** For large fires, withdraw from fire area and let fire burn. Contact may cause burns to skin and eyes. Containers may explode when heated. Risk of fire and explosion on contact with incompatible material(s). Runoff and fire-control water may pollute waters.

Special Fire Fighting Procedures:	Keep upwind. Keep unauthorized personnel away. If possible, remove containers exposed to heat or cool with water. Dike fire water for later disposal; do not spread the material.
Protective Measures:	Wear regional, national, and local standards approved fire fighting turnout gear and positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection from heat, and may not provide adequate protection from the harmful vapors or liquids.

6 ACCIDENTAL RELEASE MEASURES

Personal precautions:	Wear appropriate protective equipment. Use personal protection recommended in "8. Exposure control/personal protection". Isolate spill or leak area for proper distance in all directions. Provide adequate ventilation. Keep upwind. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Do not eat, drink or smoke when using this product. Do not breathe dust/fume/gas/mist/vapours/spray. Wash face and hands thoroughly after handling.
Emergency procedures:	Keep all unauthorized personnel upwind away. Consult an expert. Warn habitants surroundings. Navigation lock on waterways. Form large safety zone.
Environmental precautions:	Prevent entry spilled material and runoff from spillage control into waterways, sewers, basements or confined areas. Avoid release to the environment. Collect spillage.
Clean-up methods and materials and containment measures:	ELIMINATE all ignition sources such as heat/sparks/open flames/hot surfaces/static discharges. Consult an expert. Stop leak if possible without any risk. Absorb remaining liquid in dry earth, sand or other non-combustible material and remove to safe place. See "13. Disposal considerations".
Prevention of secondary hazards:	ELIMINATE all ignition sources such as heat/sparks/open flames/hot surfaces/static discharges. Prepare appropriate extinguishing agent. (See "5. Fire-fighting measures") For large spill, consider initial downwind evacuation for proper distance.

7 HANDLING AND STORAGE

Handling:	
Technical measures:	Use only outdoors or in a well-ventilated area. Keep upwind for handling outdoors as much as possible. Keep unauthorized personnel away. ELIMINATE all ignition sources. Use clean non-sparking tools. Avoid contact with eyes, skin, and clothing.
Exhausting, Ventilation:	Ventilate by appropriate method. (See "8. Exposure control/personal protection")
Notes:	Install appropriate equipment and wear appropriate protective clothing. (See "8. Exposure control/personal protection")
Safety measures:	Wash hands and face thoroughly after handling. Eating, drinking and smoking in work areas is prohibited. Contaminated work clothing should not be allowed out of the workplace. Do not breathe dust/fume/gas/mist/vapours/spray.
Storage:	
Technical measures:	Keep containers tightly closed.

Conditions: Well ventilate by proper manner according to regional, national and local regulations. Store in a dry place. Keep away from incompatible materials. See "10. Stability and reactivity". Keep away from food and feedstuffs. Store locked up.

Packaging materials: No information.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Appropriate engineering controls: Maintain eye wash fountain and quick-drench facilities in work area.

Personal protective equipment (PPE):

Respiratory Protection: Breathing protective equipment should be chosen only according to specific regulatory requirements. Wear positive pressure self-contained breathing apparatus (SCBA) in circumstance above occupational exposure standards for dust including emergency procedures and cleaning for accidental release.

Hand protection: Hand protective equipment should be chosen only according to specific regulatory requirements. Impervious gloves.

Eye protection: Eye protective equipment should be chosen only according to specific regulatory requirements. Chemical safety goggles or glasses and full face shield.

Skin protection: Personal protective equipment (PPE) should be chosen only according to specific regulatory requirements. Suitable impervious protective clothing, including protective footwear, gloves, lab coat, apron or coveralls.

Specific Hygiene Measures: Do not eat, drink or smoke during work. Wash thoroughly after handling and before eating or drinking. Contaminated work clothing should not be allowed out of the workplace. Do not breathe dust/fume/gas/mist/vapours/spray.

9 PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Viscous liquid

Color: Pale yellowish white opaque

Odor: Slightly characteristic odor

pH: 5.5 (1% emulsion, 20 °C)

Freezing point: No data available.

Boiling Point: No data available.

Flash Point: Non (Pensky-Martens closed cup)

Autoignition Temperature: No data available.

Flammability Limit - Upper (%)-: No data available.

Flammability Limit - Lower (%)-: No data available.

Vapor pressure: No data available.

Vapor density (air=1): No data available.

Relative density:	No data available.
Density:	1.03 g/ml (20 °C)
Solubility in Water:	Emulsifiable in water
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	Not applicable.
Decomposition Temperature:	No data available.
Evaporation Rate:	No data available.
Viscosity:	665 mPa.s (60rpm, 20 °C, B-type rotation viscometer)

10 STABILITY AND REACTIVITY

Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Strong oxidizers, strong acids, strong bases : fire and explosion hazards.
Conditions to avoid:	Heating
Incompatible materials:	Strong oxidizers, strong acids, strong bases
Hazardous decomposition products:	Carbon monoxide, carbon dioxide, hydrocarbons, nitrogen oxides, hydrogen cyanide, hydrogen chloride, phosgene, chloride compounds, soot

11 TOXICOLOGICAL INFORMATION

If the data of this product are not available, the data of ingredients is displayed.

Acute Toxicity:	
Oral:	Rat : LD50 980 mg/kg
Dermal:	Rat : LD50 > 2,000 mg/kg
Inhalation:	Dust/Mist: Rat : LC50 (4 h) > 1,900 mg/m ³
Skin corrosion/irritation:	Rabbit (skin irritation/corrosion test) : mildly irritating
Serious eye damage/eye irritation:	Rabbit (eye irritation/corrosion test) : minimally irritating
Respiratory sensitizer/Skin sensitizer:	Guinea pig skin sensitizer (buehler test) : non-sensitizer
Germ cell mutagenicity:	
in vitro:	No data available.
Esfenvalerate	Ames test (S. typhimurium and E. coli) : negative Chromosome aberration test (mammal cultured cell) : negative Gene mutation test (mammal cultured cell) : negative Unscheduled DNA synthesis assay (mammal cultured cell) : negative
in vivo:	No data available.
Esfenvalerate	Micronucleus test (mouse) : negative
Carcinogenicity:	No data available.

Esfenvalerate	Mouse carcinogenicity study (diet : fenvalerate) : non-carcinogenic Rat carcinogenicity study (diet : fenvalerate) : non-carcinogenic
Reproductive toxicity:	
Teratogenicity:	No data available.
Esfenvalerate	Rat teratology study : non-teratogenic Rabbit teratology study : non-teratogenic
Reproduction:	No data available.
Esfenvalerate	Rat reproductive toxicity study : no effect on reproduction
Specific target organ toxicity - single exposure:	(inhalation) : central nervous system
Specific target organ toxicity - repeated exposure:	No data available.
Esfenvalerate	Rat 90-day repeated dose toxicity study (diet) : nervous system Rat 28-day repeated dose toxicity study (dermal) : nervous system
Solvent	Rat 28-day repeated dose toxicity study (oral) : nervous system, kidneys, blood
Aspiration hazard:	No data available.
Other Effects:	No data available.

12 ECOLOGICAL INFORMATION

If the data of this product are not available, the data of ingredients is displayed.

Ecotoxicity:

Aquatic Organisms:

Acute toxicity:

Fish:	Rainbow Trout : LC50 (96 hrs) 4.8 µg/l
Crustacea:	Daphnia magna : EC50 (48 hrs) 25 µg/l
Alga:	No data available.

Esfenvalerate Alga : EC50 (0-96 hrs) 0.0065 mg/l

Chronic Toxicity:

Fish:	No data available.
Crustacea:	No data available.
Esfenvalerate	Daphnia magna : NOEC 0.0018 µg/l

Alga: No data available.
Alga : NOEC 0.001 mg/l

Others:

No data available.

Biodegradation:

Esfenvalerate No data available.
Lack of rapid biodegradability

Bioaccumulation:

Esfenvalerate No data available.
BCF (Fathead Minnow) = 1,400

Partition coefficient (n-octanol/water):

Esfenvalerate Not applicable.
Log Pow = 5.0 (23 °C)

Soil dissipation:

No data available.

Hazardous to the ozone layer:

Esfenvalerate No data available.
Montreal Protocol. Substances that Deplete the Ozone Layer, as amended : not listed to the Montreal Protocol

13 DISPOSAL CONSIDERATIONS

Disposal Methods: Dispose of contents/container appropriately in accordance with local/regional/national/international regulations.

14 TRANSPORT INFORMATION

International standards:

IMDG - International Maritime Dangerous Goods Code:

UN number	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s. (esfenvalerate mixture)
Class	9
Packing group	III
Subsidiary risk label	-
Marine Pollutant	Yes
EmS No.	F-A; S-F

IATA

UN number	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s. (esfenvalerate mixture)
Class	9
Packing group	III
Subsidiary risk label	-

Domestic Standard: In compliance with domestic law.

Specific Safety Measures and Conditions for Transportation: Make sure no damage, corrosion, leaks, and so on on the container(s) before transportation. Load not to fall, drop, damage the product, and make sure to take measures to secure the loaded products. Equip in automobile or ship for transportation with protective equipment (gloves, eyeglasses, mask, etc), and fire extinguisher, tools necessary for emergency.

15 REGULATORY INFORMATION

Please follow local regulations.

16 OTHER INFORMATION

Disclaimer: The provided information is based on currently available law, materials, information, and data; however, information regarding concentration, physical and chemical properties, and hazard identification is not guaranteed. Precautions for safe handling are intended for a normal condition. In case of specific condition, please handle a product with appropriate safety measures that are compatible to the product usage.