1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	PRALLE
Synonyms	:	PRALLE Manufacturing Use Product

Manufacturer or supplier's details

Company	:	SUMITOMO CHEMICAL Co., Ltd.
Contact person	:	Environmental Health Division 7-1, Nihonbashi 2-chome, Chuo-ku, Tokyo 103-6020, Japan
Telephone	:	+81-3-5201-0299
Telefax	:	+81-3-5201-0475
E-mail address	:	ehd-sds@ya.sumitomo-chem.co.jp
Emergency telephone number	:	Asia - Pacific region (excluding China):+65-3158-1074(CARECHEM24, Singapore) China: 400-120-6011 (CARECHEM24, China, toll-free, access from China only) Europe, Americas (excluding USA), Middle East, Africa, Israel (Europe and English Language speaking countries):+44-1235-239-670(CARECHEM24, UK) 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)

Recommended use of the chemical and restrictions on use

Use	:	Active ingredient for insecticide

2. HAZARDS IDENTIFICATION

GHS Classification

Explosives	:	Classification not possible
Flammable gases	:	Not applicable
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	:	Classification not possible
Pyrophoric liquids	:	Not applicable

Pyrophoric solids	:	Not applicable
Self-heating substances and mixtures	:	Classification not possible
Substances and mixtures, which in contact with water, emit flammable gases	:	Not applicable
Oxidizing liquids	:	Classification not possible
Oxidizing solids	:	Not applicable
Organic peroxides	:	Classification not possible
Corrosive to metals	:	Classification not possible
Acute toxicity (Oral)	:	Category 5
Acute toxicity (Dermal)	:	Not classified
Acute toxicity (Inhalation - gas)	:	Not applicable
Acute toxicity (Inhalation - vapor)	:	Classification not possible
Acute toxicity (Inhalation - dust and mist)	:	Category 4
Skin corrosion/irritation	:	Not classified
Serious eye damage/eye irritation	:	Not classified
Respiratory sensitisation	:	Classification not possible
Skin sensitisation	:	Not classified
Germ cell mutagenicity	:	Classification not possible
Carcinogenicity	:	Classification not possible
Reproductive toxicity	:	Category 2
Specific target organ toxicity - single exposure	:	Category 2 (Nervous system)
Specific target organ toxicity - repeated exposure	:	Category 2 (Blood, Nervous system)
Aspiration hazard	:	Classification not possible
Acute aquatic toxicity	:	Category 1
Chronic aquatic toxicity	:	Category 1

Hazardous to the ozone layer : Classification not possible

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : H303 May be harmful if swallowed.
H332 Harmful if inhaled.
H361 Suspected of damaging fertility or the unborn child.
H371 May cause damage to nervous system.
H373 May cause damage to blood, nervous system through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P264 Wash face and hands thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P271 Use only outdoors or in a well-ventilated area.

Response:

P391 Collect spillage.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P308 + P311 IF exposed or concerned: Call a POISON CENTER/doctor.
P314 Get medical advice/attention if you feel unwell.

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 / Mixture : Mixture

Chemical Name	CAS-No.	Concentration(%)
[2,5-dioxo-3-(prop-2-ynyl)imidazolidin-1-yl]methyl (1*R*)-*cis*,*trans*-chrysanthemate or [2,5-Dioxo-3-(2-propynyl)-1-imidazolidinyl]methyl(1*RS*)-*cis*-*trans*-chrysanthemate (ISO common name: imiprothrin)	72963-72-5	49.0-52.0
Other	Non-disclosure	Balance

Hazardous components

Chemical Name	CAS-No.	Concentration (%)
[2,5-dioxo-3-(prop-2-ynyl)imidazolidin-1-yl]methyl (1*R*)-*cis*,*trans*-chrysanthemate or [2,5-Dioxo-3-(2-propynyl)-1-imidazolidinyl]methyl(1*RS*)-*cis*-*trans*-chrysanthemate (ISO common name: imiprothrin)	72963-72-5	49.0-52.0

4. FIRST AID MEASURES

If inhaled : Remove person to fresh air and keep comfortable for breathing.
Administer oxygen if breathing is difficult.
If breathing has stopped, apply artificial respiration.
Do not use mouth-to-mouth method.
Rinse nose, mouth and throat with water.
Keep person warm with a blanket etc.
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.
Get immediate medical advice/attention.

In case of skin contact : Gently wash with plenty of soap and water.
Remove/Take off immediately contaminated clothing and shoes.
If skin irritation or rash occurs: Get medical advice/attention.

In case of 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, if necessary.

If swallowed : Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious.
Never give anything by mouth to an unconscious person.
Get immediate medical advice/attention.

Remove person to fresh air and keep comfortable for breathing.
Keep person warm with a blanket etc.
If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Administer oxygen if breathing is difficult.
If breathing has stopped, apply artificial respiration.
Do not use mouth-to-mouth method.
Effect of exposure to substance may be delayed. Medical observation is indicated.

Protection of first-aiders : During rescue operations, wear protective equipment (see "8. Exposure control/personal protection").
Be aware that this product contains reproductive toxin(s).

Notes to physician : Phenobarbital treatment may be effective to convulsion in the setting of acute poisoning, as palliative treatment.

5. FIREFIGHTING MEASURES

Suitable extinguishing media : Water
alcohol-resistant foam
Regular foam
Dry sand

Unsuitable extinguishing media : Straight streams

Specific hazards during firefighting : May decompose explosively when heated or involved in a fire.
The heat from external fire may cause the product to decompose explosively.
Cool containers with an appropriate cooling means, paying heed to incompatible hazardous substances (see "10. Stability and reactivity").
The combustion gas and/or the decomposition gas may contain an irritating, corrosive and/or toxic gas.
Harmful gases (see "10. Stability and reactivity") may be released by fire and may cause dizziness, suffocation, or other health hazards.
Harmful substances in the water runoff from fire control may have adverse environmental and biological effects.
May ignite again, if it is not cooled enough in fire fighting.
Fight fire from safe distance, if overheated containers may explode.

Specific extinguishing methods : Keep upwind.
Fight fire from a protected location.
Keep unauthorized personnel away.
In case of large fire and large quantities: Evacuate area. Fight fire remotely enough.
Protecting other nearby combustibles before they catch fire: Remove containers or sprinkle them with water, etc., if this can be done safely.
Protecting the product from external fire: Remove product-containing containers to a safe place, or cool the nearby equipment with water, etc., if this can be done safely.
Do not subject containers to friction or shock.

If the fire cannot be stopped, let it burn itself out while cooling with water spray to prevent the fire from spreading.
Confining and smothering fire is preferable.
Stop leak if possible without any risk.
Dike fire water for later disposal; do not spread the material.

Special protective equipment for firefighters : Wear regional, national, and local standards approved fire fighting turnout gear and positive pressure self-contained breathing apparatus (SCBA).
Wear flame-resistant or fireproof clothes, with face shield, helmet and gloves.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Personal precautions
Wear appropriate protective equipment (see "8. Exposure control/personal protection") to avoid contact of droplets with the eyes or skin, or inhalation of mist or vapors.
Emergency procedures
Evacuate people who are downwind, and keep upwind while working.
Keep unauthorized personnel away.
Lock navigation on waterways until the safety have been confirmed.
If the surrounding area may be affected (including health impairment), warn the nearby residents.
Remove immediately all ignition sources nearby.
Form large safety zone.
In case of a large spill, use foam to reduce vapors.
Water spray may reduce vapor for large spill.
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")
Prevent discharge into drain ditches, drain sewers, basements or closed areas.

Environmental precautions : Do not release the product to the environment.
Form a dike to prevent the leakage from flowing into waterways (rivers, sewers, etc.) and affecting the environment.

Methods and materials for containment and cleaning up : Collect the leakage promptly.
Stop leak if possible without any risk.
Collect the leakage in a sealed container as far as possible.
Dike far ahead of liquid spill for later disposal.
Absorb remaining liquid in dry earth, sand or other non-combustible material and remove to safe place.
Collect the entire amount by repeatedly sopping it up with a suitable absorbent material.
Use explosion-proof electrical/ventilating/lighting/equipment, when this product may ignite at high temperatures.
ELIMINATE all ignition sources such as heat/sparks/open flames/hot surfaces/static discharges.
Consult with an expert when collecting the leakage.
Collect the residue carefully and transfer it to a safe place.

Collect leakage after taking measures for safe handling (see "7. Handling and storage").
See "13. Disposal considerations".

7. HANDLING AND STORAGE

Technical measures	:	ELIMINATE all ignition sources! Take precautionary measures against static electricity such as grounding and bonding, wearing anti-static footwear and clothing, using grounded conductive floor, when this product may ignite at high temperatures. Use explosion-proof electrical/ventilating/lighting/equipment, when this product may ignite at high temperatures. Prevent generation of mist. Keep upwind while working, being ready for exposure to the leakage. Keep away from ignition sources such as open frame and hot surface, in case of mist generation by spraying etc. Use only outdoors or in a well-ventilated area. Do not eat, drink or smoke when using this product. Install appropriate equipment and wear appropriate personal protective equipment (see "8. Exposure control/personal protection"). Do not breathe mist or vapours. Do not get in eyes or mouth or on skin. Avoid contact with eyes, skin, and clothing. Do not bring contaminated protective equipment into the rest area. Wear an appropriate protective equipment to avoid contact to skin, mucosa membrane or eyes. Use disposable protective clothing, if possible. Contaminated work clothing should be disposed or be cleaned and reused, with appropriate way. Dispose of contaminated protective clothing safely.
Local/Total ventilation	:	Ventilate by a system of local and/or general exhaust.
Advice on safe handling	:	Keep away from incompatible materials (see "10. Stability and reactivity"). Avoid inhaling.
Conditions for safe storage	:	Keep in a fire-proof designed place. Store under controlled lighting and appropriate ventilation. Store locked up. Take precautionary measures against static electricity such as grounding and bonding, wearing anti-static footwear and clothing, using grounded conductive floor, when this product may ignite at high temperatures. Ground/bond container and receiving equipment, when this product may ignite at high temperatures. Keep away from food, drink and animal feedingstuffs. Maintain air gap between stacks or pallets. Store in a dark place. Store in a well-ventilated place. Keep container tightly closed. Store in an area without drain or sewer access.

See "10. Stability and reactivity"
Store in a dry place. Store in a closed container.

Packaging material : Use container ruled in UNRTDG (UN Recommendations on the Transport of Dangerous Goods).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering measures : Use a local and/or general ventilation system with absorber.
Provide facilities to wash hands, eyes, and the body at the working place.

Personal protective equipment

Respiratory protection : Be sure to use appropriate breathing protective equipment.
When an emergency or leak occurs, wear air respirator or positive pressure self-contained breathing apparatus (SCBA).

Hand protection : Be sure to use appropriate breathing protective equipment.
Impervious gloves

Eye protection : Be sure to use appropriate breathing protective equipment.
Chemical safety goggles or glasses and full face shield.

Skin and body protection : Be sure to use appropriate breathing protective equipment.
Suitable impervious protective clothing, including protective footwear, gloves, lab coat, apron or coveralls.

Hygiene measures : Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Use only outdoors or in a well-ventilated area, unless it can be handled in closed system.
Do not inhale this product.
Avoid all exposure to a person.
Do not get in eyes or mouth or on skin.
Do not eat, drink or smoke when using this product.
Contaminated work clothing should be disposed or be cleaned and reused, with appropriate way.
When disposing of contaminated protective equipment and work clothes, take appropriate measures to prevent contamination of the surrounding environment.
Wash face and hands thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Clear liquid

NOTE: PRALLE of SUMITOMO CHEMICAL Co., Ltd. displays a temperature-dependent phase separation. The phase separation may occur when storage conditions are below 5°C, and once it occurs, the concentration of active ingredient in the drum may NOT be homogenous. In the event PRALLE is phase-separated, please warm the drum at 40°C, shake (roll) the drum well and check visually the liquid is homogeneous so as to get an uniform quality. Details are

indicated in the technical document provided by SUMITOMO CHEMICAL Co., Ltd..

Colour	:	Golden yellow(5Y 8/12)
Odour	:	Characteristic Odor
pH	:	5.22 25°C, 1% dispersion (Purified water)
Melting point/freezing point	:	no data available
Boiling point	:	no data available
Flash point	:	110 °C Method: Pensky-Martens Closed Cup
Evaporation rate	:	no data available
Upper explosion limit / upper flammability limit	:	no data available
Lower explosion limit / Lower flammability limit	:	no data available
Vapour pressure	:	no data available
Relative vapour density	:	no data available
Relative density	:	0.979 (20 °C)
Density	:	no data available
Water solubility	:	no data available
Solubility in other solvents	:	no data available
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	no data available
Decomposition temperature	:	no data available
Viscosity, dynamic	:	0.06 Pa･s (25 °C)

10. STABILITY AND REACTIVITY

Chemical stability	:	Material is stable under normal conditions.
Possibility of hazardous reactions	:	Decomposition by heat, chemical reaction, subjecting to friction or shock may cause sudden rise of temperature and pressure. Heating may decompose the product, leading to rupture of containers. Heating may decompose the product, leading to fire and/or explosion.

Mist may form an explosive mixture with air regardless of temperature.
Open flame
Mechanical spark
Electrical spark
Welding spark
Hot surface(s)
Heating
Friction heat
Electrostatic discharge
Strong bases
: may cause a fire and/or explosion
Heating
mechanical shock
Oxidizing agent
Strong oxidizing agents
Strong acids
: may cause a fire, explosion, and generation of a toxic gas

Conditions to avoid : Open flame
Mechanical spark
Electrical spark
Welding spark
Heating
Hot surface(s)
Electrostatic discharge
Mechanical shock

Incompatible materials : Strong acids
Strong bases
Oxidizing agent

Hazardous decomposition products : Carbon monoxide
Carbon dioxide
Hydrocarbons
Soot
Nitrogen Oxides
Ammonia

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Oral
Inhalation
Dermal
Eyes

Acute toxicity

Product:

Acute oral toxicity : LD50(Rat): 2,400 mg/kg
Target Organs: Nervous system

Acute inhalation toxicity : LC50(Rat): 2,810 - 4,430 mg/m^3
Exposure time: 4 h
Target Organs: Not classified based on available information.
Remarks: Dusts, mists and fumes

Acute dermal toxicity : LD50(Rat): > 2,000 mg/kg
Target Organs: No specific target organs noted.

Skin corrosion/irritation

Product:

Species : Rabbit
Result : Not irritating

Serious eye damage/eye irritation

Product:

Species : Rabbit
Result : Not irritating

Respiratory or skin sensitisation

Product:

Test Type : Skin sensitisation
Species : Guinea Pig
Method : Maximization test
Result : non-sensitizer

Germ cell mutagenicity

Product:

Genotoxicity in vitro : Remarks: no data available

Genotoxicity in vivo : Remarks: no data available

Components:

imiprothrin:

Genotoxicity in vitro : Test Type: Ames test
Test system: S. typhimurium and E. coli
Result: negative

Test Type: chromosome aberration test
Test system: Chinese hamster cell
Result: positive

Test Type: gene mutation test
Test system: Chinese hamster cell
Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse
Cell type: Bone marrow
Application Route: Oral
Result: negative

Test Type: unscheduled DNA synthesis assay
Species: Rat
Cell type: Liver
Result: negative

Carcinogenicity

Product:

Remarks : no data available

Components:

imiprothrin:

Species	:	Rat
Application Route	:	diet
Method	:	carcinogenicity study
Result	:	non-carcinogenic

Species	:	Mouse
Application Route	:	diet
Method	:	carcinogenicity study
Result	:	non-carcinogenic

Reproductive toxicity

Product:

Effects on fertility : Remarks: no data available

Effects on foetal development : Remarks: no data available

Components:

imiprothrin:

Effects on fertility :
Species: Rat
Application Route: Oral
Method: two-generation reproductive toxicity study
Result: no effect on reproduction, no effect on fertility

Species: Rat
Application Route: Oral
Method: Study for effects on pre- and postnatal development, including maternal function
Result: no effect on offspring, no effect on reproduction

Species: Rat
Application Route: Oral
Method: Study of Fertility and Early Embryonic Development to Implantation
Result: non-embryo/fetal lethal, no effect on reproduction

Effects on foetal development :
Species: Rat
Application Route: Oral
Method: teratology study
Result: adverse effect on offspring, non-embryo/fetal lethal

Species: Rabbit
Application Route: Oral
Method: teratology study
Result: no effect on offspring

STOT - single exposure

See Acute toxicity ("11. Toxicological information")

STOT - repeated exposure

Product:

Remarks : no data available

Components:

imiprothrin:

Species : Mouse
Application Route : diet
Method : 90-day repeated dose toxicity study
Target Organs : No specific target organs noted.

Species : Rat
Application Route : diet
Method : 90-day repeated dose toxicity study
Target Organs : No specific target organs noted.

Species : Rat
Application Route : Inhalation
Method : 28-day repeated dose toxicity study
Target Organs : Nervous system

Species : Rat
Application Route : diet
Method : 28-day repeated dose toxicity study
Target Organs : Blood

Species : Rat
Application Route : Dermal
Method : 21-day repeated dose toxicity study
Target Organs : No specific target organs noted.

Species : Dog
Application Route : Oral
Method : 90-day repeated dose toxicity study
Target Organs : No specific target organs noted.

Aspiration toxicity

Product:

no data available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : Remarks: no data available

Toxicity to daphnia and other aquatic invertebrates : Remarks: no data available

Toxicity to algae	:	Remarks: no data available
Toxicity to fish (Chronic toxicity)	:	Remarks: no data available
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	Remarks: no data available

Components:

imiprothrin:

Toxicity to fish	:	LC50 (Rainbow Trout): 0.038 mg/l Exposure time: 96 hrs LC50 (Bluegill Sunfish): 0.070 mg/l Exposure time: 96 hrs
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna): 0.051 mg/l Exposure time: 48 hrs
Toxicity to algae	:	ErC50 (Green algae): > 7.8 mg/l Exposure time: 72 hrs NOECr (Green algae): 1.3 mg/l Exposure time: 72 hrs
Toxicity to fish (Chronic toxicity)	:	Remarks: no data available
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0.015 mg/l Species: Daphnia magna

Persistence and degradability

Biodegradability	:	Remarks: no data available

Bioaccumulative potential

Bioaccumulation	:	Remarks: no data available

Mobility in soil

no data available

Other adverse effects

Ozone-Depletion Potential	:	Regulation: UNEP - Handbook for the Montreal Protocol on Substances that Deplete the Ozone Layer Remarks: 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 Regulations

UNRTDG

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (IMIPROTHRIN MIXTURE)
Class	:	9
Packing group	:	III
Labels	:	9

IATA-DGR

UN/ID No.	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (IMIPROTHRIN MIXTURE)
Class	:	9
Packing group	:	III
Labels	:	Miscellaneous Dangerous Goods
Packing instruction (cargo aircraft)	:	964
Packing instruction (passenger aircraft)	:	964

IMDG-Code

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (IMIPROTHRIN MIXTURE)
Class	:	9
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Marine pollutant	:	yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Special precautions for user

Remarks	:	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.

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

15. REGULATORY INFORMATION

Please follow local regulations.

16. OTHER INFORMATION

NOTE:
PRALLE of SUMITOMO CHEMICAL Co., Ltd. displays a temperature-dependent phase separation. The phase separation may occur when storage conditions are below 5°C, and once it occurs, the concentration of active ingredient in the drum may NOT be homogenous. In the event PRALLE is phase-separated, please warm the drum at 40°C, shake (roll) the drum well and check visually the liquid is homogeneous so as to get an uniform quality. Details are indicated in the technical document provided by SUMITOMO CHEMICAL Co., Ltd..

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 a 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.