

# MATERIAL SAFETY DATA SHEET

## 1 PRODUCT AND COMPANY IDENTIFICATION

**Product name:** Pesguard FG161

**Synonym:** d-Tetramethrin 4%, cypenothrin 12% EC

**Limitations on use:** Public hygiene insecticide

**Supplier:**

**Company Name:** SUMITOMO CHEMICAL COMPANY, LIMITED

**Contact Department / Section:** Vector Control Division  
27-1, Shinkawa 2-chome, Chuo-ku, Tokyo, 104-8260, Japan

**Telephone:** +81-3-5543-5622

**Fax:** +81-3-5543-5947

**Emergency telephone:** Asia - Pacific region (excluding China): +65-3158-1074 (CARECHEM24, Singapore)  
China: +86-10-5100-3039 (CARECHEM24, Beijing, China)  
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)

## 2 HAZARDS IDENTIFICATION

### GHS classification:

<b>Physical hazards</b>	Explosives	Classification not possible
	Flammable gases	Not applicable
	Flammable aerosols	Not applicable
	Oxidizing gases	Not applicable
	Gases under pressure	Not applicable
	Flammable liquids	Category 4
	Flammable solids	Not applicable
	Self-reactive substances and mixtures	Classification not possible
	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	Classification not possible
	Oxidizing liquids	Classification not possible
	Oxidizing solids	Not applicable
	Organic peroxides	Classification not possible
	Corrosive to metals	Classification not possible
<b>Health hazards</b>	Acute toxicity (Oral)	Category 5
	Acute toxicity (Dermal)	Not classified
	Acute toxicity (Inhalation - gas)	Not applicable
	Acute toxicity (Inhalation - vapour)	Classification not possible
	Acute toxicity (Inhalation - dust and mist)	Not classified
	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Not classified
	Respiratory sensitizer	Classification not possible
	Skin sensitizer	Not classified
Germ cell mutagenicity	Classification not possible	
Carcinogenicity	Category 2	

	Toxic to reproduction	Category 1B
	Specific target organ toxicity - single exposure	Category 1 (Nervous system, Kidneys) Category 2 (Liver, Respiratory system) Category 3 (Narcotic effects, Respiratory tract irritation)
	Specific target organ toxicity - repeated exposure	Category 1 (Nervous system, Kidneys) Category 2 (Respiratory system)
	Aspiration hazard	Category 1
<b>Environmental hazards</b>	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):**

- H227: Combustible liquid.
- H303: May be harmful if swallowed.
- H314: Causes severe skin burns and eye damage.
- H351: Suspected of causing cancer.
- H360: May damage fertility or the unborn child.
- H370: Causes damage to Nervous system or kidneys.
- H371: May cause damage to Liver or respiratory system.
- H335: May cause respiratory irritation.
- H336: May cause drowsiness or dizziness.
- H372: Causes damage to Nervous system or Kidneys through prolonged or repeated exposure.
- H373: May cause damage to Respiratory system through prolonged or repeated exposure.
- H304: May be fatal if swallowed and enters airways.
- H400: Very toxic to aquatic life.
- H410: Very toxic to aquatic life with long lasting effects.

**Precautionary statement**

**Prevention:**

- P201: Obtain special instructions before use.
- P202: Do not handle until all safety precautions have been read and understood.
- P270: Do not eat, drink or smoke when using this product.
- P271: Use only outdoors or in a well-ventilated area.
- P210: Keep away from heat/sparks/open flames/hot surfaces/static discharges. - No smoking.
- P260: Do not breathe dust/fume/gas/mist/vapours/spray.
- P273: Avoid release to the environment.
- P264: Wash face and hands thoroughly after handling.
- P281: Use personal protective equipment as required.
- P280: Wear protective gloves/eye protection/face protection.

- Response:** P370+P378: In case of fire: Use fire-extinguisher for extinction as required.  
P391: Collect spillage.  
P303+P361+P353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.  
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P310: Immediately call a POISON CENTER or doctor/physician.  
P314: Get medical advice/attention if you feel unwell.  
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P308+P313: IF exposed or concerned: Get medical advice/attention.  
P321: Specific treatment (See "4. First-aid measure").  
P363: Wash contaminated clothing before reuse.
- Storage:** P233+P403+P235+P405: Keep container tightly closed. Store locked up in a well-ventilated cool place.
- 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
3,4,5,6-tetrahydrophthalimidomethyl (1R)-cis,trans-chrysanthemate (ISO common name: tetramethrin) (Synonym : Neo-Pynamin Forte)	7696-12-0 (racemic)	4%
(RS)- $\alpha$ -cyano-3-phenoxybenzyl (1R)-cis,trans-chrysanthemate (ISO common name: cyphenothrin) (Synonym : Gokilaht)	39515-40-7 (racemic)	12%
Emulsifier	—	10%
Solvent	—	balance

### 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:** Pay attention to the risk of combustion by fire or other sources of ignition. 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. Wash contaminated clothing before reuse.
- Eye contact:** 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.

<b>Ingestion</b>	Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. 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. Do not give victim anything to drink if he is unconscious. Effect of exposure to substance may be delayed. Medical observation is indicated.
<b>Personal Protection for First-aid Responders:</b>	Be aware that this product contains Carcinogen/Mutagen/Reprotoxic (CMR) material. Do not use mouth-to-mouth method; give artificial respiration with the aid of pocket mask equipped with a one-way valve or other proper respiratory medical device. Be aware of own risk during rescue! Use personal protective equipment as required.
<b>Notes to the physician:</b>	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

<b>Extinguishing media:</b>	Small fires: DRY chemical powder, Carbon dioxide, Water spray, Regular foam Large fires: Water spray, Fog, Regular foam
<b>Unsuitable extinguishing media:</b>	Straight streams
<b>Unusual Fire &amp; Explosion Hazards:</b>	HIGHLY FLAMMABLE. Will be easily ignited by ignition sources such as heat, mechanical sparks, static discharge or open flames. Vapors may form explosive mixtures with air. Vapor explosion hazard indoors, outdoors or in sewers. Containers may explode when heated. Runoff and fire-control water may pollute waters. Fire may produce toxic gases (See "10. Stability and reactivity"). Risk of fire and explosion on contact with incompatible material(s). Inhalation, ingestion or contact with vapors or substance may cause severe injury or death. Contact may cause burns to skin and eyes. Contact may cause burning of eyes and flow of tears. Inhalation may cause coughing, difficult breathing and nausea. Effects of contact or inhalation may be delayed.
<b>Special Fire Fighting Procedures:</b>	If possible, fight fire from protected position. Large fire or tanks; Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Keep upwind. Keep unauthorized personnel away. If possible, remove containers exposed to heat or cool with water. Let the fire burn itself out with cooling cylinder/vessel by water spray unless leak can be stopped. Dike fire water for later disposal; do not spread the material. Cool containers with flooding quantities of water until well after fire is out.
<b>Protective Measures:</b>	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. Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.

## 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 or walk through spilled material. Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. 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. For large spill; water spray may reduce vapor.
- 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. Use explosion-proof electrical equipment and lighting. Stop leak if possible without any risk. Collect leaking and spilled liquid in sealable containers as far as possible. Use clean non-sparking tools to collect absorbed material. For large spill, dike far ahead of liquid spill for later disposal. See "13. Disposal considerations". Take up with dry sand, dry vermiculite, or other dry non-combustible absorbent material and place into containers for later disposal.
- Prevention of secondary hazards:** Use clean non-sparking tools. Take precautionary measures against static electricity such as grounding and bonding, wearing anti-static footwear and clothing, using grounded conductive floor. Prepare appropriate extinguishing agent. (See "5. Fire-fighting measures") For large spill, consider initial downwind evacuation for proper distance. ELIMINATE all ignition sources such as heat/sparks/open flames/hot surfaces/static discharges. Prevent heat and contact with hot surface.

## 7 HANDLING AND STORAGE

- Handling:**
- Technical measures:** ELIMINATE all ignition sources. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static electricity such as grounding and bonding, wearing anti-static footwear and clothing, using grounded conductive floor. Use only outdoors or in a well-ventilated area. Keep upwind for handling outdoors as much as possible. Keep unauthorized personnel away. Do not subject to heating/ friction/ shock. Avoid contact with eyes, skin, and clothing. Prevent generation of mist.
- 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") Use personal protective equipment as required. Wear protective gloves/eye protection/face protection.

<b>Safety measures:</b>	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Do not breathe dust/fume/gas/mist/vapours/spray. Wash face and hands thoroughly after handling. Wash contaminated clothing before reuse.
<b>Storage:</b>	
<b>Technical measures:</b>	Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Take precautionary measures against static discharges. Keep containers tightly closed.
<b>Conditions:</b>	Well ventilate by proper manner according to regional, national and local regulations. Protect against direct sunlight. Keep in a fire-proof designed place. Provision to contain effluent from fire extinguishing. Keep away from incompatible materials. See "10. Stability and reactivity". Keep away from food and feedstuffs. Keep in a cool place. Store in an area without drain or sewer access. Display "Flammable - Keep Fire Away", as appropriate. See "10. Stability and reactivity" Keep container tightly closed. Store locked up in a well-ventilated cool place.
<b>Packaging materials:</b>	No information

## 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

<b>Appropriate engineering controls:</b>	Use a system of local and/or general exhaust to maintain product vapor, mist concentrations in air below occupational exposure standards. Wear gas respirators or positive pressure self-contained breathing apparatus (SCBA) in an emergency (e.g. unavailability of adequate ventilation, generation of mist or aerosol) and in emergency procedures and cleaning for accidental release. Personal protective equipment (PPE) should be chosen only according to specific regulatory requirements. Maintain eye wash fountain and quick-drench facilities in work area. Take precautionary measures against static electricity such as grounding and bonding, wearing anti-static footwear and clothing, using grounded conductive floor. Ventilate mist generated by processes at elevated temperature. Wear personal protective equipment (PPE) for handling the product.
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### Personal protective equipment (PPE):

<b>Respiratory Protection:</b>	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.
<b>Hand protection:</b>	Hand protective equipment should be chosen only according to specific regulatory requirements. impervious gloves, chemical resistant gloves
<b>Eye protection:</b>	Eye protective equipment should be chosen only according to specific regulatory requirements. chemical safety goggles chemical safety goggles or glasses and full face shield.
<b>Skin protection:</b>	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. Use anti static discharge work wear and footwear.
<b>Specific Hygiene Measures:</b>	Avoid inhalation. Wash thoroughly after handling and before eating or drinking. Contaminated work clothing should not be allowed out of the workplace. Avoid contact with skin and eyes. PREVENT GENERATION OF VAPOR OR MIST. Use only outdoors or in a well-ventilated area.



## 9 PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical State:</b>	Liquid
<b>Color:</b>	Pale yellow
<b>Odor:</b>	Characteristic odor
<b>pH:</b>	No data available.
<b>Freezing point:</b>	No data available.
<b>Boiling Point:</b>	No data available.
<b>Flash Point:</b>	72.5 °C (Tag closed cup)
<b>Autoignition Temperature:</b>	No data available.
<b>Flammability Limit - Upper (%)–:</b>	No data available.
<b>Flammability Limit - Lower (%)–:</b>	No data available.
<b>Vapor pressure:</b>	No data available.
<b>Vapor density (air=1):</b>	No data available.
<b>Relative density:</b>	0.917 (20 °C)
<b>Solubility in Water:</b>	No data available.
<b>Solubility (other):</b>	No data available.
<b>Partition coefficient (n-octanol/water):</b>	Not applicable
<b>Decomposition Temperature:</b>	No data available.
<b>Evaporation Rate:</b>	No data available.
<b>Viscosity:</b>	70 cPa.s

## 10 STABILITY AND REACTIVITY

<b>Stability:</b>	Stable under normal conditions.
<b>Possibility of hazardous reactions:</b>	Strong oxidizers, strong acids, strong bases: fire and explosion hazards. Will form explosive mixtures with air.
<b>Conditions to avoid:</b>	Ignition sources (open flame, spark, heat, hot surface, static discharge etc) , incompatibles, heating, accumulation of static electricity Keep away from heat/sparks/open flames/hot surfaces/static discharges. -No smoking.
<b>Incompatible materials:</b>	Strong oxidizers, strong acids, strong bases
<b>Hazardous decomposition products:</b>	Carbon monoxide, carbon dioxide, hydrocarbons, nitrogen oxides, hydrogen cyanide, soot

## 11 TOXICOLOGICAL INFORMATION

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

### Acute Toxicity:

**Oral:** Rat : LD50 2,350 mg/kg

**Dermal:** Rat : LD50 > 2,000 mg/kg

**Inhalation:** Dust/Mist: Rat : LC50 (4 h) > 5,050 mg/m<sup>3</sup>

**Skin corrosion/irritation:** Rabbit (skin irritation/corrosion test) : severely irritating

**Serious eye damage/eye irritation:** Rabbit (eye irritation/corrosion test) : not irritating

**Respiratory sensitizer/Skin sensitizer:** Guinea Pig Skin sensitizer (Buehler test) : practically non-sensitizer

### Germ cell mutagenicity:

**in vitro:**

Neo-Pynamin Forte  
Ames test : negative  
Gene mutation test (Chinese hamster cell) : negative

Gokilaht  
Ames test (S. typhimurium and E. coli) : negative  
Chromosome aberration test (Mammal cultured cell) : negative  
Gene mutation test (Mammal cultured cell) : negative  
Sister chromatid exchange assay (Mammal cultured cell) : negative

**in vivo:**

Neo-Pynamin Forte  
No data available.  
Chromosome aberration test (Mouse, Intraperitoneal, bone marrow) : negative

Gokilaht  
Micronucleus test (Mouse, Oral, bone marrow) : negative

### Carcinogenicity:

Neo-Pynamin Forte  
No data available.  
Rat carcinogenicity study : non-carcinogenic (testis)  
Mouse carcinogenicity study : non-carcinogenic

Gokilaht  
Rat carcinogenicity study (diet) : non-carcinogenic  
Mouse carcinogenicity study (diet) : non-carcinogenic

### Evaluation on carcinogenicity:

Chemical name	IARC	ACGIH
Ethylbenzene	Group: 2B	Group: A3

### Reproductive toxicity:

**Teratogenicity:** No data available.

Neo-Pynamin Forte  
Rabbit teratology study : non-teratogenic  
Gokilaht  
Rat teratology study (oral) : non-teratogenic  
Rabbit teratology study (oral) : non-teratogenic

Xylene  
Mouse teratology study (oral) : teratogenic  
Ethylbenzene  
Rat teratology study (oral) : teratogenic  
Mouse teratology study (oral) : teratogenic

**Reproduction:** No data available.

Neo-Pynamin Forte  
Rat two-generation reproductive toxicity study : no effect on fertility  
Gokilaht  
Rat two-generation reproductive toxicity study (diet) : no effect on fertility

### Specific target organ toxicity - single exposure:

Neo-Pynamin Forte  
No data available.  
Gokilaht  
Rat acute toxicity study(oral) : Nervous System  
Mineral oil  
Rat acute toxicity study (oral) : Nervous System  
Xylene  
Human evidence: Kidny, Respiratory tract irritation, Narcotic effect  
Human evidence: Respiratory tract, Liver. Kidney



Ethylbenzene Rat acute toxicity study(inhalation): Nervous System, Respiratory tract irritation

**Specific target organ toxicity - repeated exposure:** No data available.

Neo-Pynamin Forte Rat 28-day repeated dose toxicity study (diet) : Liver  
Rat 90-day repeated dose toxicity study (Inhalation) : Liver, Kidney  
Gokilaht Dog 28-day repeated dose toxicity study (Oral) : Nervous system  
Rat 28-day repeated dose toxicity study (diet) : Nervous system  
Mineral oil Human evidence: Kidny  
Xylene Human evidence: Respiratory tract, Nervous system

**Aspiration hazard:** No data available.  
Mineral oil Human evidence: Aspiration toxicity : positive  
Xylene Human evidence: Aspiration toxicity : positive  
Ethyl benzene Human evidence: Aspiration toxicity : positive

**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:** No data available.  
Neo-Pynamin Forte Rainbow Trout : LC50 (96 hrs) 10 µg/l  
Gokilaht Rainbow Trout : LC50 (96 hrs) 0.34 µg/l  
**Crustacea:** No data available.  
Gokilaht Daphnia magna : LC50 (48 hrs) 0.43 µg/l  
**Alga:** No data available.  
Gokilaht Green alga : ErC50 (72 hrs) > 0.014 mg/l

##### Chronic Toxicity:

**Fish:** No data available.  
**Crustacea:** No data available.  
**Alga:** No data available.  
Gokilaht Green alga : NOECr (0 - 72 hrs) 0.0050 mg/l

**Others:** No data available.

**Biodegradation:** No data available.

**Bioaccumulation:** No data available.

**Soil dissipation** No data available.

**Hazardous to the ozone layer:** 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. (tetramethrin, cyphenothrin 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. (tetramethrin, cyphenothrin 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 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.