

GOKILAHT™ MANUFACTURING USE PRODUCT

ACCEPTED
APR 7
U.S. Federal
as amended, for
registered under
EPA Reg. No.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

WARNING

May be fatal if swallowed or inhaled. Do not breathe vapors. Harmful if absorbed through the skin. Do not get on skin, in eyes or on clothing. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Remove contaminated clothing and wash before reuse.

ENVIRONMENTAL HAZARDS

This product is extremely toxic to fish and other aquatic organisms. Do not discharge effluent containing this product directly into lakes, streams, ponds, estuaries, oceans or public waters unless this product is specifically identified and addressed in NPDES permit. Do not discharge effluent containing this product to sewer systems without previously notifying the sewage treatment plant authority. For guidance, contact your State Board or Regional Office of the Environmental Protection Agency.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat or open flame.

STORAGE AND DISPOSAL

STORAGE: Containers should be stored in a cool, dry, well ventilated area. Do not expose to prolonged heat. Keep container closed when not in use.

PROHIBITIONS: Do not contaminate water, food or feed by storage or disposal. Open dumping is prohibited.

PESTICIDE DISPOSAL: Do not re-use empty container. Securely wrap in several layers of newspaper and discard trash.

CONTAINER DISPOSAL Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures by state and local authorities.

GENERAL: Consult federal, state or local disposal authorities for approved alternative products.

INSTRUCTIONS TO FORMULATOR

This technical product is intended for the manufacture of an insecticide fumigating fogger formulation for residential indoor use. Formulators using this product are responsible for obtaining Environmental Protection Agency Registration for their formulated products. Refer to Sumitomo Chemical Americas, Inc. technical bulletins for formulation instructions and other information.

ACTIVE INGREDIENTS:

(RS) - alpha-cyano-3-phenoxybenzyl (1R)-cis/trans -
chrysanthemate 87.4%
Other isomers 4.6%

INERT INGREDIENTS: 8.0%
..... 100%

WARNING

SEE SIDE PANEL FOR PRECAUTIONARY STATEMENTS

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED:

Call a physician or a Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person.

IF INHALED:

Remove victim to fresh air. If not breathing, give artificial respiration, preferably by mouth-to-mouth. Get medical attention.

IF ON SKIN:

Remove contaminated clothing and wash affected areas with soap and water.

DIRECTIONS FOR USE

It is a violation of federal law to use this product in a manner inconsistent with its labeling.

Refer to technical literature for formulation of Gokilaht™ for end uses.

Formulators are responsible for providing data to support their formulated products.

Warm to room temperature. Mix well in drum before use.

NOTICE — READ CAREFULLY

CONDITIONS OF SALE:

Sumitomo (and seller) offer(s) this product for sale subject to the conditions of sale and warranty which may only be varied by the agreement of a duly authorized representative of Sumitomo.

WARRANTY LIMITATION:

Sumitomo warrants that this product conforms to the description in the directions for use on the label subject to the inherent risks referred to below. Sumitomo makes no other warranties. THERE IS NO IMPLIED WARRANTY OF MERCHANTABILITY and there are no warranties which extend beyond the description of the label hereof.

INHERENT RISKS:

The directions for use of this product are believed to be safe and should be followed carefully. However, it is impossible to eliminate all risks associated with use. Buyer assumes all risks associated with use or application of this product contrary to the directions or resulting from extraordinary weather conditions.

LIMITATION OF LIABILITY:

In no case shall Sumitomo be liable for special, indirect or consequential damages resulting from the use or handling of this product and no claim of any kind shall be greater in amount than the purchase price of the product in respect of which such damages are claimed.

EPA Registration No. 10308-10
EPA Est. No. 10008-JP-02

SUMITOMO CHEMICAL COMPANY, LTD.
5-33 Kitahama 4-chome, Chuo-ku
Osaka, Japan

Net Weight _____ pounds _____ (Kilos) Lot No. _____
™Trademark of Sumitomo Chemical Company, Ltd.

GOKILAH T

Manufacturing Use Product

Technical Manual



Sumitomo Chemical Company, Ltd.
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INTRODUCTION

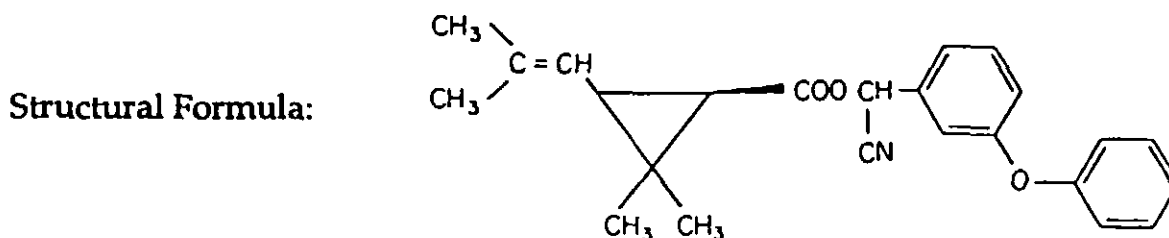
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Gokilaht, (RS)-alpha-cyano-3-phenoxybenzyl (1R)-cis/trans-chrysanthemate, is a new pyrethroid insecticide, developed by Sumitomo Chemical Co., Ltd. Gokilaht provides a strong killing activity to house flies, mosquitoes and cockroaches. Further, Gokilaht has a high knockdown and flushing activity, especially to cockroaches. It can be used in various formulations for controlling household and industrial insects, and insect pests on or around animals. This brochure contains technical information necessary for use and for end-product formulation.

CHEMICAL NAME AND FORMULA

Chemical Name: (RS)-alpha-cyano-3-phenoxybenzyl (1R)-cis/trans-chrysanthemate

Common Name: cyphenothrin (ISO) as racemic



Empirical Formula: $C_{24}H_{25}NO_3$

Molecular Formula: 375.47

CHEMICAL AND PHYSICAL PROPERTIES

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Appearance:	Yellowish viscous liquid
Odor:	Faint characteristic odor
Boiling Point:	154°C at 0.1 mm Hg
Specific Gravity:	$d_4^{25} = 1.08$
Vapor Pressure:	8.7×10^{-7} mm HG at 20° C
Viscosity:	3400 cP at 20° C
Flesh Point:	130° C
Ignition Point:	340° C
Partition Coefficient:	$\log P = 6.29$ (OECD 107) at 20° C
Stability:	Stable over two years under normal storage conditions
Solubility:	Miscible with most solvents ¹ and virtually insoluble in water ² at 22-25° C
¹ Alcohol:	methanol
Cellosolves:	ethyl cellosolve
Esters:	ethyl acetate
Ketones:	acetone, cyclohexanone, methyl isobutyl ketone
Aromatic hydrocarbons:	alpha-methylnaphthalene, Shellsol A and Solvesso 150 (alkyl benzene), Tenneco 500-100, xylene
Others:	chloroform, dimethylformamide, dimethyl sulfoxide, Isopar M (paraffinic oil), n-hexane
² Water:	< 10 ppb

USE PATTERN AND EFFICACY

Gokilaht is used for the control of insects of public health importance and is especially effective against cockroaches, bedbugs, fleas, flies and mosquitoes. Further, Gokilaht has excellent cockroach flushing abilities and residual activity.

INSECTICIDAL

LD₅₀ (ug/insect) Topical Application

	Housefly ¹	Mosquito ²	Cockroach ³
Gokilaht	0.026	0.0028	0.16
Permethrin	0.027	0.0072	0.39

¹ Musca domestica

² Culex pipiens

³ Blattella germanica

FLUSHING

FT₅₀ (min.) - % Mortality¹

	Oil Formulation				Emulsion Formulation			
	0.25%		0.50%		0.25%		0.50%	
Gokilaht	2.9	98%	2.4	99%	4.3	42%	3.8	75%
Permethrin	4.6	76%	3.5	99%	5.2	27%	4.4	53%

¹ Blattella germanica

RESIDUAL

LC₅₀ (mg/m² plywood panel)¹

	Initial	2 weeks	4 weeks	8 weeks
Gokilaht	235	310	400	490
Permethrin	600	900	920	960

¹ Blattella germanica

TOXICOLOGY

Mammalian Toxicity

Acute Oral LD ₅₀ Rats:	318 mg/kg (males) 419 mg/kg (females)
Acute Dermal LD ₅₀ Rats:	> 5,000 mg/kg (males) > 5,000 mg/kg (females)
Acute Inhalation LC ₅₀ Rats:	> 1,850 mg/M ³ 3 hr exposure (males and females)
Eye Irritation Potential:	Not irritant on rabbits
Skin Irritation Potential:	Not irritant on rabbits
Dermal Sensitization:	Negative on guinea pigs
Acute Subcutaneous LD ₅₀ Rats:	> 5,000 mg/kg (males) > 5,000 mg/kg (females)

Mutagenic Potential

Negative for inducing micronuclei in bone marrow erythrocytes of mice

Negative in Ames Assay using five strains of Salmonella

Negative for chromosomal aberrations in Chinese hamster ovary cells

Toxicity to Aquatic Organisms

96-Hour LC₅₀

Guppy	97.1 ug/liter
Carp	5.65 ug/liter
Killifish	10.5 ug/liter
Rainbow Trout	0.34 ug/liter

48-Hour LC₅₀

<u>Daphnia magna</u>	0.43 ug/liter
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SAFE HANDLING

Precautions

- May be fatal if swallowed or inhaled.
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- Harmful if absorbed through the skin.
- Do not get on skin, in eyes or on clothing.
- Remove contaminated clothing and wash before re-use.
- Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.
- Do not use or store near heat or open flame.

First Aid

If swallowed, call a physician or a Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person.

If inhaled, remove victim to fresh air. If not breathing, give artificial respiration, preferably by mouth-to-mouth. Get medical attention.

If on skin, remove contaminated clothing and wash affected area with soap and water.

Environmental Hazard

This product is extremely toxic to fish and other aquatic organism. Do not discharge effluent containing this product directly into lakes, streams, ponds, estuaries, oceans or public waters unless this product is specifically identified and addressed in NPDES permit. Do not discharge effluent containing this product to sewer systems without previously notifying the sewage treatment plant authority. For guidance, contact your State Board or Regional Office of the Environmental Protection Agency.