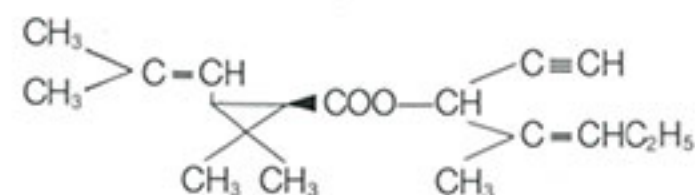


CHEMICAL AND PHYSICAL PROPERTIES

Trade Name : Vaporthrin
 Common Name : Empenthrin
 Chemical Name : (RS)-1-ethynyl-2-methyl-2-pentenyl
 (1R)-cis, trans-chrysanthemate

Chemical Structure



Molecular Formula : C₁₈H₂₆O₂
 Molecular Weight : 274.40
 Appearance : Pale yellowish oily liquid
 Specific Gravity : d₂₀²⁰0.927
 Viscosity : 18.2 cps (20°C)
 Flash Point : 138 ~ 140°C
 Vapor Pressure : 1.04 × 10⁻⁴ mmHg (23.6°C) [Gas saturation method (Measured value)]
 Reference values obtained by GC method

Temperature (°C)	Vapor pressure (mmHg)		
	200	225	250
Vaporthrin	28.6	71.3	154.9
<i>d-trans</i> Allethrin	8.3	22.8	55.3
DDVP	152.2	287.1	509.0

Solubility : Miscible with almost all of aromatic or aliphatic hydrocarbons, chlorinated hydrocarbons and other organic solvents. Almost insoluble in water.
 Stability : Stable when tested at 40°C × 6 month



The Best Care
 for Your
 Beautiful Clothes

®: Registered trademark of Sumitomo Chemical Co., Ltd.

 SUMITOMO CHEMICAL COMPANY, LIMITED

Environmental Health Division
 5-33, Kitahama 4-chome, Chuo-ku, Osaka 541, Japan

New Pyrethroid for Moth-Proofing

Vaporthrin®



The Odorless Moth-Proofing Agent, That Everyone Requires.

A Wide Variety of Vaporthrin® Formulations Offer Effective Protection Against Insect Damage.

INTRODUCTION

Everyone wishes to protect their clothing from moth damage.

Vaporthrin is a new type of pyrethroid insecticide that provides protection from insect damage, does not have an annoying odor, and is long lasting.

Vaporthrin has a high vapor pressure, which is not normally obtained by conventional pyrethroids.

Use Vaporthrin, without an offensive odor, to keep your clothes completely moth free.

CHARACTERISTICS

• Excellent Moth Control

Vaporthrin provides the best means of protecting your clothes against insect damage.

• High Vapor Pressure

It vaporizes at room temperature, producing a moth-proofing agent.

• Odorless

Does not release annoying odors.

• Low Toxicity to Humans

You can safely use it for long-term moth control.

• Various Formulations

Select a suitable formulation for your needs.

• Stable Supply

Will not deteriorate when stored.

TOXICITY

Acute Toxicity for Rats

Oral LD₅₀ ♂ > 5,000 mg/kg (BBT-0039)

♀ > 3,500 mg/kg (BBT-0039)

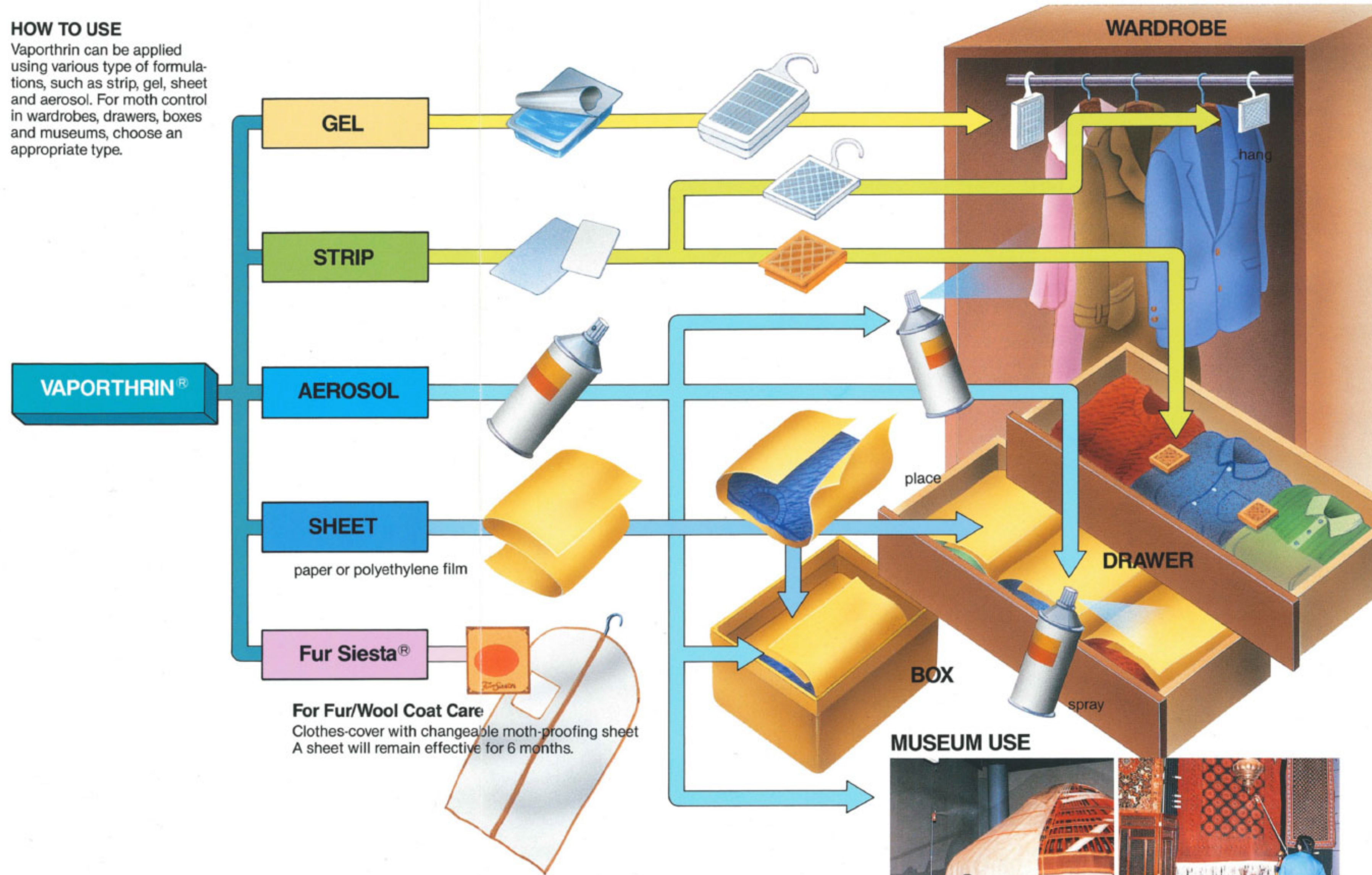
Dermal LD₅₀ ♂ ♀ > 2,000 mg/kg (BBT-0040)

NOTICE TO FORMULATORS

Vaporthrin might cause discoloration of copper containing materials when directly applied.

HOW TO USE

Vaporthrin can be applied using various type of formulations, such as strip, gel, sheet and aerosol. For moth control in wardrobes, drawers, boxes and museums, choose an appropriate type.

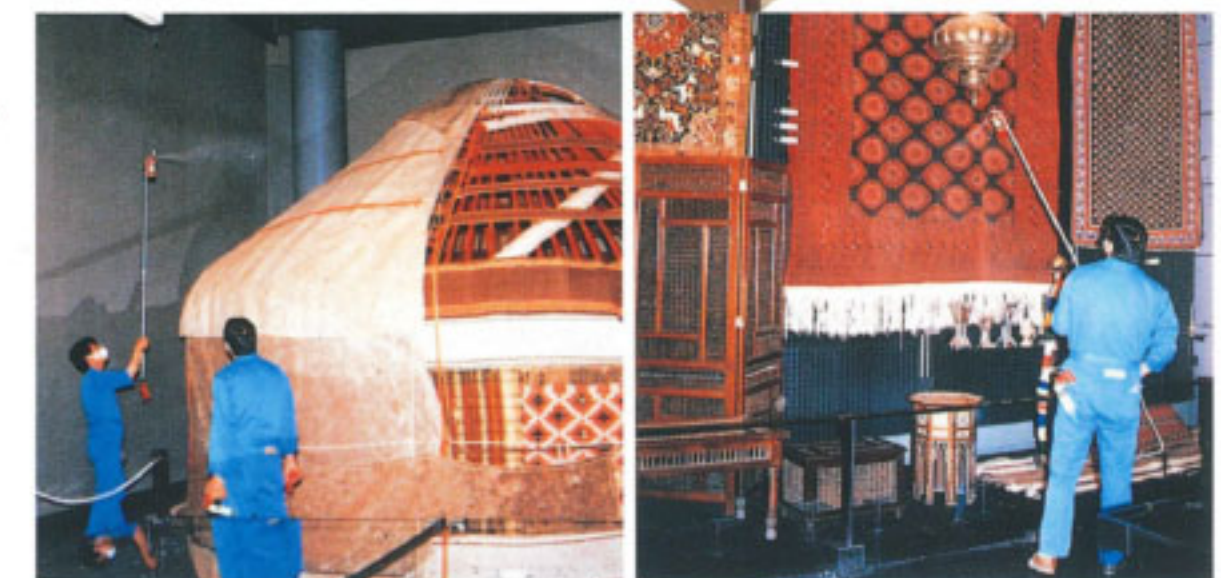


DOSAGE

Formulation	Dosage	Duration of effectiveness
strip	0.5 - 1 g (A.I.)/sheet/500ℓ	6 months
sheet	0.175 g (A.I.)/sheet*/50ℓ	12 months
aerosol	8g/spray**/500ℓ	3-4 months

*0.35m x 1m sheet **1.9% aerosol

MUSEUM USE



• Spraying on a Mongolian tent • Spraying on carpets