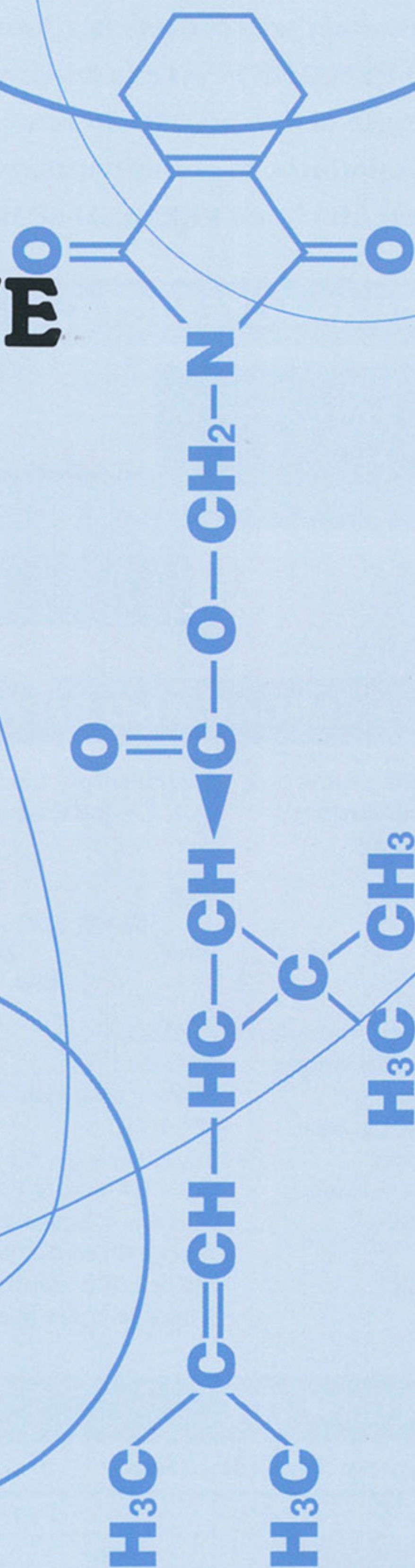


SUMITOMO CHEMICAL

# NEO-PYNAMIN<sup>®</sup> FORTE





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## 1. INTRODUCTION

NEO-PYNAMIN<sup>®</sup> FORTE, a fortified grade of Neo-Pynamin<sup>®</sup>, consists of *d-trans* and *cis* isomers of tetramethrin for quicker knockdown.

NEO-PYNAMIN FORTE is widely used in the household and in public health fields as a high-strength active ingredient in aerosols, oil liquids, emulsifiable concentrates and other formulations, in combination with a synergist and/or a killing agent such as SUMITHRIN<sup>®</sup>, GOKILAHT<sup>®</sup> and PREMIUM SUMITHION<sup>®</sup>.

## 2. CHARACTERISTICS

Super Knockdown

Low Mammalian Toxicity

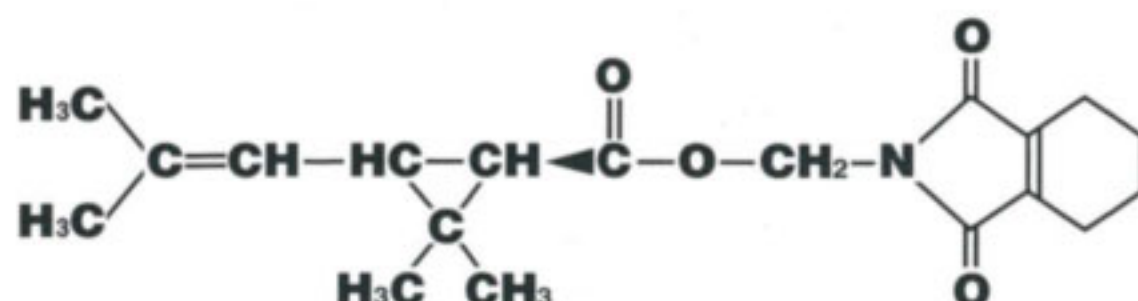
Excellent Stability

Easy Formulation

Economical

## 3. CHEMICAL AND PHYSICAL PROPERTIES

Common name : *d*-tetramethrin (name recommended by Sumitomo)  
Chemical name : 3, 4, 5, 6-tetrahydrophthalimidomethyl (1*R*)-*cis*, *trans*-chrysanthemate  
Structure :



Empirical formula : C<sub>19</sub>H<sub>25</sub>O<sub>4</sub>  
Molecular weight : 331.41  
Appearance : Slightly yellowish viscous liquid  
Specific gravity : d<sub>4</sub><sup>20</sup> 1.11  
Viscosity : 10,490 cps (30°C)  
Vapor pressure : 4.5 x 10<sup>-6</sup> mmHg (25°C)  
Solubility : Miscible with most aromatic and aliphatic hydrocarbons, and other organic solvents.  
Practically insoluble in water (2-4 ppm at 25°C)  
Stability : Stable under normal storage conditions. Stable in most organic solvents.  
Unstable under light irradiation and in aqueous alkaline solution.

## 4. TOXICITY

### 1. Acute Toxicity (Rat)

|                  | LD <sub>50</sub> (mg/kg) |        |
|------------------|--------------------------|--------|
|                  | Male                     | Female |
| Oral (IT-0086)   | >5,000                   | >5,000 |
| Dermal (IT-0086) | >5,000                   | >5,000 |

### 2. Other Toxicological Studies

Various toxicological studies have shown no cause for toxicological concern.



## 5. EFFICACY

### 1. Comparative Knockdown Efficacy

Formulation : Oil liquid

Method/Insect : Glass chamber test method/ Housefly (*Musca domestica*) & Mosquito (*Culex pipiens pallens*)  
CSMA cockroach spray test method/Cockroach (*Blattella germanica*)

| Compound          | Relative efficacy |          |           |
|-------------------|-------------------|----------|-----------|
|                   | Housefly          | Mosquito | Cockroach |
| Neo-Pynamin Forte | 200               | 200      | 202       |
| Neo-Pynamin       | 100               | 100      | 100       |

### 2. Comparative Killing Efficacy

Method : Topical application test method

Insect : Housefly (*Musca domestica*)  
Mosquito (*Culex pipiens pallens*)  
Cockroach (*Blattella germanica*)

| Compound          | Relative efficacy |          |           |
|-------------------|-------------------|----------|-----------|
|                   | Housefly          | Mosquito | Cockroach |
| Neo-Pynamin Forte | 204               | 193      | 283       |
| Neo-Pynamin       | 100               | 100      | 100       |

### 3. Flushing-out Efficacy

Method : Flushing-out test method

Formulation : Oil liquid

Insect : German cockroach (*Blattella germanica*)

| Compound          | FT <sub>50</sub> * (min.) |                   |
|-------------------|---------------------------|-------------------|
|                   | 0.25 (A.I. %, w/v)        | 0.5 (A.I. %, w/v) |
| Neo-Pynamin Forte | 4.2                       | 2.4               |
| Neo-Pynamin       | 5.7                       | 3.5               |
| Pyrethrins        | 4.6                       | 3.0               |
| Dichlorvos        | >10                       | >10               |
| Propoxur          | >10                       | >10               |

\* FT<sub>50</sub>: Time required to flush out 50% of test insects

### 4. Aerosols against Flying Insects

Method : CSMA aerosol test method

Insect : Housefly (*Musca domestica*)  
Mosquito (*Culex pipiens pallens*)

| Neo-Pynamin Forte/<br>Sumithrin | Housefly                   |                  |                            |                  | Mosquito                   |                  |                            |                  |
|---------------------------------|----------------------------|------------------|----------------------------|------------------|----------------------------|------------------|----------------------------|------------------|
|                                 | OBA                        |                  | WBA                        |                  | OBA                        |                  | WBA                        |                  |
|                                 | KT <sub>50</sub><br>(min.) | Mortality<br>(%) | KT <sub>50</sub><br>(min.) | Mortality<br>(%) | KT <sub>50</sub><br>(min.) | Mortality<br>(%) | KT <sub>50</sub><br>(min.) | Mortality<br>(%) |
| 0.2/0.1                         | 5.0                        | 91               | 5.6                        | 94               | 6.1                        | 97               | 6.5                        | 96               |
| OTA*                            | 9.1                        | 86               | 9.3                        | 86               | 8.2                        | 87               | 8.6                        | 87               |

\* Official Test Aerosol (CSMA, USA): oil-based aerosol containing 0.2% pyrethrins and 1.6% piperonyl butoxide



## 5. Aerosols against Crawling Insects

Method : Direct spray test method

Insect : German cockroach (*Blattella germanica*)

| Neo-Pynamin Forte/<br>Sumithrin | Knockdown (%) |        |         |         | KT <sub>50</sub><br>(min.) | Mortality<br>(%, after 72hrs) |
|---------------------------------|---------------|--------|---------|---------|----------------------------|-------------------------------|
|                                 | 2 min.        | 5 min. | 10 min. | 20 min. |                            |                               |
| 0.15/0.15                       | 33            | 77     | 95      | 100     | 2.8                        | 92                            |
| OTA*                            | 0             | 10     | 30      | 60      | 16.2                       | 78                            |

\* Official Test Aerosol (CSMA, USA): oil-based aerosol containing 0.2% pyrethrins and 1.6% piperonyl butoxide

## 6. RECOMMENDABLE USAGES

NEO-PYNAMINFORTE is also recommended for such uses as in pump sprays (oil liquid, emulsifiable concentrate), aerosols (FIK, CIK), dusts, and fogging/ULV formulations.

## 7. AVAILABLE FORMS OF NEO-PYNAMIN FORTE

### 1. Technical Grade

### 2. Premixtures for Aerosol

|                     |                   |           |
|---------------------|-------------------|-----------|
| 1) Pesguard FG 11   | Neo-Pynamin Forte | 40 %, w/w |
|                     | Gokilaht          | 40        |
| 2) Pesguard FGW 11* | Neo-Pynamin Forte | 10        |
|                     | Gokilaht          | 10        |
| 3) Pesguard FG 13   | Neo-Pynamin Forte | 20        |
|                     | Gokilaht          | 60        |
| 4) Pesguard FG 15   | Neo-Pynamin Forte | 13.3      |
|                     | Gokilaht          | 66.7      |

\* ready-to-use for WBA

### 3. Emulsifiable Concentrate

|                 |                   |    |
|-----------------|-------------------|----|
| Pesguard FG 161 | Neo-Pynamin Forte | 4  |
|                 | Gokilaht          | 12 |

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