

# MATERIAL SAFETY DATA SHEET

## REGISTRATION HOLDER IN RSA:

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## MANUFACTURER:

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Shiodome City Center, 1-5-2,  
Higashi-Shimbashi, Minato-ku  
Tokyo 105-7117, Japan  
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### 1. Chemical Product and Company Identification

Product Name: **MILBEKNOCK 1% EC**  
Synonyms: MILBEKNOCK 1 EC, MILBEKNOCK 1% Emulsifiable Concentrate  
Milbemectin 1%EC, Milbemectin 1EC,  
Milbemectin 1% Emulsifiable Concentrate  
Product Use Description: Agricultural/horticultural  
miticide/insecticide  
Miticidal/insecticidal active ingredient: SI-8601, SI-9009 (milbemectin 1%EC)  
milbemectin (ISO common name)

Milbemectin is a mixture of M.A<sub>3</sub> and M.A<sub>4</sub> at a ratio 3/7.

CAS NO (active ingredient): 51570-36-6  
Molecular Formula (active ingredient): M.A<sub>3</sub>:C<sub>31</sub>H<sub>44</sub>O<sub>7</sub>  
M.A<sub>4</sub>:C<sub>32</sub>H<sub>46</sub>O<sub>7</sub>  
Manufacturer: MITSUI CHEMICALS AGRO, INC.  
Shiodome City Center, 1-5-2,  
Higashi-Shimbashi, Minato-ku  
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### 2. Composition/Information on Ingredients

Substance/Mixture: Mixture  
Ingredient

Active ingredient: milbemectin 1%(w/w)

M.A<sub>3</sub>: (10*E*,14*E*,16*E*,22*Z*)-(1*R*,4*S*,5'*S*,6*R*,6'*R*,8*R*,13*R*,20*R*,21*R*,24*S*)-  
21,24-dihydroxy-5',6',11,13,22-pentamethyl-3,7,19-  
trioxatetracyclo[15.6.1.1<sup>4,8</sup>.0<sup>20,24</sup>]pentacosa-  
10,14,16,22-tetraene-6-spiro-2'-tetrahydropyran-2-one

0.30 %(w/w)

M.A<sub>4</sub>: (10*E*,14*E*,16*E*,22*Z*)-(1*R*,4*S*,5'*S*,6*R*,6'*R*,8*R*,13*R*,20*R*,21*R*,24*S*)-  
6'-ethyl-21,24-dihydroxy-5',11,13,22-tetramethyl-

3,7,19-trioxatetracyclo[15.6.1.1<sup>4,8</sup>.0<sup>20,24</sup>]pentacosa-  
10,14,16,22-tetraene-6-spiro-2'-tetrahydropyran-2-one  
0.70 %(w/w)

Inert ingredients: 99%(w/w)

### 3. Hazards

#### Emergency overview

Product is a pale yellow transparent oily liquid with slight stimulative odor.  
It can cause slight eye and skin irritation.  
No other known hazards in normal use.

#### Primary Routs of Entry:

Mist inhalation and skin contact

Eyes: May cause slight eye irritation.

Skin: May cause slight skin irritation.

Does not cause skin sensitization in animal studies.

Ingestion: No specific health effects are known for ingestion of a small amount  
incidental to routine handling and use.

Inhalation: No specific health effects are known.

Chronic: Milbemectin is not teratogenic nor carcinogenic.

### 4. First Aid Measures

Eyes: Flush with plenty of water for at least 15 minutes.

Get medical attention if irritation persists.

Skin: Wash with soap and plenty of water.

Inhalation: Remove to fresh air. Get medical attention if breathing difficulty develops.

Ingestion: Call a Physician or Poison Control Center immediately.

Vomiting should be induced only under the direct supervision of a  
physician.

If a person is unconscious or convulsing, do not induce vomiting or give  
anything by mouth.

#### NOTE TO PHYSICIAN:

Contains petroleum distillates. If vomiting is induced, care should be taken  
to prevent aspiration of vomitus.

Treat symptomatically.

### 5. Fire-Fighting Measures

Flammable Properties: Milbeknock 1%EC is a flammable liquid. Major flammable  
constituents are Cyclohexanone and Aromatic Hydrocarbons.

Extinguishing Media: CO<sub>2</sub>, dry chemical, foam, water

Fire Fighting Instruction: Move containers from fire area if it can be done without risk.  
Isolate hazard area, avoid inhalation of smoke and fumes.  
Contain runoff by diking to prevent entry into sewers or  
waterways.

## 6. Accidental Release Measures

### General and Disposal

Use proper protective equipment to minimize personal exposure during clean-up.

Ensure that the disposal is in compliance with relevant laws and regulations.

### Land Spill or Leak

Keep material out of streams and sewers. Dike to confine spill and absorb with an absorbent such as clay, sand or soil. Vacuum, shovel or pump wastes into a drum for later disposal. Wash area with water and detergent thoroughly and collect wash waters into a drum for later disposal.

## 7. Handling and Storage

### Handling

Do not get in eyes, on skin, or in clothing. Avoid breathing vapors or spray mist.

Wash hands before eating, drinking, chewing gum, using tobacco, or using toilet.

Wash contaminated clothing before re-use. This product is toxic to fish. Do not apply directly to water. Drift or runoff from treated area may be hazardous to aquatic organisms in neighboring aquatic site. Do not contaminate water when disposing of equipment wash waters.

### Storage Conditions

Keep away from heat, flame, and all sources of ignition.

Store in cool, dark, and well-ventilated. Protect from direct sunlight.

Store in an original container and keep closed.

Do not contaminate other pesticides fertilizers, water, foodstuffs or feed by storage and disposal.

## 8. Exposure Controls/Personal Protection

Wear coveralls or long sleeved protective uniform and head covering. Wear chemical resistant gloves, apron and shoes. Wear goggles or face shield and a pesticide respirator.

## 9. Physical and Chemical Properties

Appearance:	Transparent oily liquid
Odor:	Slightly stimulative odor
Color:	Pale yellow
Flash Point:	43°C (Closing Cup) 47°C GHS : Flammable Liquids Category 3
Autoignition Point:	335°C
Minimum Ignition Energy:	Not available
Oxidizing properties:	Not an Oxider
Density:	About 930 g/L at 20°C

## 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperature and storage conditions.
Incompatibility With Other Pesticide:	Incompatible with strong alkali.
Decomposition:	Decomposition will not occur.
Polymerization:	Polymerization will not occur.

## 11. Toxicological Information

Eye Effects:	May cause slight eye irritation. 1000 fold dilution does not cause irritation in rabbit study.	
Skin Effects:	Dermal LD <sub>50</sub> (Rat)	> 5000 mg/kg
	May cause slight skin irritation, 1000 fold dilution does not cause irritation in rabbit study. Does not cause skin sensitization.	
Acute Oral Effects:	Oral LD <sub>50</sub> (Rat)	5200 (M), 5300 (F) mg/kg
Acute Inhalation Effects:	LC <sub>50</sub> (Rat, 4 hour exposure)	> 6.75 mg/L*

The studies below were carried out with milbemectin technical, the active ingredient of this formulated product.

Subchronic Toxicity:	NOEL (Rat)	375 ppm
	NOEL (Mouse)	1000 ppm
Chronic/Carcinogenicity:	No Carcinogenic effects were observed in the studies.	
	NOEL (Rat)	150 ppm
	NOEL (Mouse)	200 ppm
Mutagenicity:	Not mutagenic in both bacterial reverse mutation test and <i>in vitro</i> cytogenetics studies.	
Teratogenicity:	No teratogenic effects were observed in the studies.	
	NOEL (Rat)	60 mg/kg/day
	NOEL (Rabbit)	1,000 mg/kg/day
Reproduction:	Reproductive NOEL 200 ppm in two generation study in rats.	

## 12. Ecological Information

### Environmental Hazards

This product is toxic to fish. Do not apply directly to water, or to areas where surface water is present. Drift and run off from treated area may be hazardous to fish in adjacent sites. Do not contaminate water by cleaning of equipment or disposal of wastes.

Aquatic toxicity		
	96 hr LC <sub>50</sub> (Rainbow trout):	0.45 mg/L
	48 hr EC <sub>50</sub> ( <i>Daphnia</i> ):	0.42 mg/L
Birds toxicity		
	LD <sub>50</sub> (Mallard duck):	> 2250 mg/kg

### 13. Disposal Considerations

Do not contaminate water, foodstuff or feed by disposal. Open dumping or burning of this product or its packaging is prohibited. Burning in an incinerator can be made in accordance with local relevant laws and regulations. However, the appropriate regulatory agencies should be contacted prior to disposal, because acceptable methods of disposal may vary by location, and regulatory requirements may change.

### 14. Shipping Regulations

Transportation Information

**UN Number** : 1993

**Sea (IMDG)** : Class 3, Packing Group III  
Flammable liquid, n.o.s.  
(contains cyclohexanone and aromatic hydrocarbons)  
MARINE POLLUTANT

**Air (ICAO / IATA):** Class 3, Packing Group III  
Flammable liquid, n.o.s.  
(contains cyclohexanone and aromatic hydrocarbons)

### 15. Labeling

Caution: Keep out of reach of children.

### 16. Disclaimer

The information is believed to be correct as of the date hereof, but should only be used as a guide. The information is offered solely for your consideration, investigation and verification. Mitsui Chemicals Agro disclaims any expression or implied warranty as to the accuracy of the above information and shall not be held liable for any direct, incidental or consequential damages resulting from the above information.