

MATERIAL SAFETY DATA SHEET

Product identifier: COURAZE™ 4F

Product use: Insecticides.

Supplier's name and address:

Cheminova Inc.

P.O. Box 110566

One Park Drive, Suite 150

Research Triangle Park, NC

27709

Phone #: (919) 474-6600 (8 AM to 5:00 PM EST, Monday to Friday)

Emergency Telephone #: 1-866-303-6950 (Medical Emergencies)
1-800-424-9300 (24 Hr. Chemtrec Number)

MSDS Prepared by: Cheminova Inc.

MSDS Preparation date: December 11, 2009

Revision date: N/A

Revision reasons: N/A

Manufacturer's name and address:

Refer to supplier.

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name COURAZE™ 4F

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

| <u>Hazardous Component Name</u> | <u>CAS-No.</u> | <u>Average % by Weight</u> |
|---------------------------------|----------------|----------------------------|
| Imidacloprid | 138261-41-3 | 40.70 |
| Trade Secret Ingredient(s) | | |

SECTION 3. HAZARDS IDENTIFICATION

NOTE: Please refer to Section 11 for detailed toxicological information.

| | |
|-------------------------------------|---|
| <u>Emergency Overview</u> | Caution! Harmful if swallowed, inhaled or absorbed through the skin. Avoid contact with skin, eyes and clothing. Highly toxic to bees. Highly toxic to aquatic invertebrates. |
| Physical State | liquid suspension |
| Appearance | brown |
| Routes of Exposure | Ingestion, Inhalation, Eye contact, Skin Absorption |
| Immediate Effects | |
| Eye | May cause mild irritation to eyes. Avoid contact with eyes. |
| Skin | Harmful if absorbed through skin. Avoid contact with skin and clothing. |
| Ingestion | Harmful if swallowed. Do not take internally. |
| Inhalation | Harmful if inhaled. Avoid inhalation of vapour or mist. |
| Chronic or Delayed Long-Term | This product or its components may have target organ effects. |

SECTION 4. FIRST AID MEASURES

| | |
|-------------------------------------|---|
| General | When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment. |
| Eye | Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately. |
| Skin | Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Call a physician or poison control center immediately. |
| Ingestion | Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended. |
| Inhalation | Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately. |
| Notes to Physician Treatment | There is no specific antidote. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. |

SECTION 5. FIRE FIGHTING MEASURES

| | |
|-------------------------------------|---|
| Flash point | > 93.4 °C / 200.1 °F |
| Suitable Extinguishing Media | water, carbon dioxide (CO ₂), dry chemical, foam |
| Fire Fighting Instructions | <p>Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Dike area to prevent runoff and contamination of water sources. Equipment or materials involved in pesticide fires may become contaminated.</p> <p>Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.</p> |

SECTION 6. ACCIDENTAL RELEASE MEASURES

| | |
|--------------------------------|---|
| Personal Precautions | Keep unauthorized people away. Avoid contact with spilled product or contaminated surfaces. Isolate hazard area. |
| Methods for Cleaning Up | Take up with absorbent material (e.g. sand, diatomaceous earth or a proprietary absorbent material). Keep in suitable, closed containers for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations. |

| | |
|--------------------------|--|
| Additional Advice | Use personal protective equipment. Do not allow product to enter streams, sewers or other waterways. Do not allow product to contact vegetation. |
|--------------------------|--|

SECTION 7. HANDLING AND STORAGE

| | |
|---------------------------------|---|
| Handling Procedures | Handle and open container in a manner as to prevent spillage. |
| Storing Procedures | Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area. |
| Work/Hygienic Procedures | <p>Take off contaminated clothing and shoes immediately. Then wash thoroughly and put on clean clothing.</p> <p>Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.</p> <p>Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. As soon as practical, wash thoroughly and change into clean clothing.</p> |

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

| | |
|-------------------------------|---|
| General Protection | <p>Follow all label instructions. Train employees in safe use of the product.</p> <p>Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry.</p> |
| Engineering Controls | Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation. |
| Eye/Face Protection | goggles |
| Hand Protection | Chemical-resistant gloves made of waterproof material such as neoprene, butyl rubber, barrier laminate or nitrile rubber |
| Body Protection | Wear long-sleeved shirt and long pants and shoes plus socks. |
| Respiratory Protection | When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or Industry recommendations. |

Exposure Limits

This product contains material which are Trade Secret and may have Occupational Exposure Limits.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|-----------------------|-------------------|
| Appearance | brown |
| Physical State | liquid suspension |

Density ca. 1.19 g/cm³ at 20 °C

Melting / Freezing Point -8.9 °C / 16.0 °F

Viscosity 700 - 1,400 mPa.s

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability Stable under normal conditions.

**Hazardous
Decomposition Products** hydrogen chloride (HCl)
nitrogen oxides (NO_x)

SECTION 11. TOXICOLOGICAL INFORMATION

Only acute toxicity studies have been performed on this product as formulated. The non-acute information pertains to the technical-grade active ingredient, imidacloprid.

Acute Oral Toxicity male rat: LD50: 4,690 mg/kg

female rat: LD50: 4,070 mg/kg

Acute Dermal Toxicity male/female rabbit: LD50: > 5,050 mg/kg

Acute Inhalation Toxicity male/female rat: LC50: 2.1 mg/l
Exposure time: 4 h
Determined in the form of liquid aerosol.
(actual)

male/female rat: LC50: 8.4 mg/l
Exposure time: 1 h
Determined in the form of liquid aerosol.
Extrapolated from the 4 hr LC50.
(actual)

Skin Irritation rabbit: No skin irritation.

Eye Irritation rabbit: Minimally irritating.

Sensitization guinea pig: Non-sensitizing.

Chronic Toxicity In chronic dietary studies in rats and dogs exposed to imidacloprid, the target organs were the thyroids and/or liver.

Assessment Carcinogenicity

In oncogenicity studies in rats and mice, imidacloprid was not considered carcinogenic in either species.

ACGIH
None.

NTP
None.

IARC
None.

OSHA
None.

**Reproductive &
Developmental Toxicity**

REPRODUCTION: In a two-generation reproduction study in rats, imidacloprid was not a primary reproductive toxicant. Offspring exhibited reduced body weights at the high dose and in conjunction with maternal toxicity.

DEVELOPMENTAL TOXICITY: In developmental toxicity studies in rats and rabbits, there was no evidence of an embryotoxic or teratogenic potential for imidacloprid. In both species, developmental effects were observed only at high doses and in conjunction with maternal toxicity.

Neurotoxicity

Neurotoxicity studies in rats showed slight behavioral and activity changes only at the highest dose tested. There were no correlating morphological changes observed in the neural tissues.

Mutagenicity

The imidacloprid mutagenicity studies, taken collectively, demonstrate that the active ingredient is not genotoxic or mutagenic.

SECTION 12. ECOLOGICAL INFORMATION

**Environmental
Precautions**

Highly toxic to aquatic invertebrates. Toxic to wildlife. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Apply this product as specified on the label.

Highly toxic to bees. Toxic to bees exposed to direct treatment. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.

SECTION 13. DISPOSAL CONSIDERATIONS

**General Disposal
Guidance**

Pesticide, spray mixture or rinse water that cannot be used according to label instructions may be disposed of on site or at an approved waste disposal facility.

Container Disposal

Do not re-use empty containers. Triple rinse containers. Puncture container to avoid re-use. Dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State/Provincial and local authorities, by burning. If burned, stay out of smoke.

SECTION 14. TRANSPORT INFORMATION

TRANSPORTATION CLASSIFICATION:
Not regulated for Domestic Surface Shipment

FREIGHT CLASSIFICATION:
Insecticides or Fungicides, N.O.I.; other than poison

SECTION 15. REGULATORY INFORMATION

This product contains material(s) which are Trade Secret and are on various Regulatory Lists. These material(s) are not listed below.

US Federal Regulations

TSCA list

None.

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

None.

SARA Title III - Section 302 - Notification and Information

None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

None.

US States Regulatory Reporting

CA Prop65

This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients

None.

Canadian Regulations

Canadian Domestic Substance List

None.

Environmental

CERCLA

None.

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 2 Flammability - 1 Reactivity - 0 Others - none

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

This information is provided in good faith but without express or implied warranty. Buyer assumes all responsibility for safety and use not in accordance with label instructions.

™Couraze is a trademark of Cheminova.