

Safety Data Sheet

DURAGUARD ME

Revision date : 2012/03/02
Version: 2.0

Page: 1/9
(30472208/SDS_CPA_US/EN)

1. Product and Company Identification

Company
BASF CORPORATION
100 Park Avenue
Florham Park, NJ 07932, USA

24 Hour Emergency Response Information
CHEMTREC: 1-800-424-9300
BASF HOTLINE: 1-800-832-HELP (4357)

Registrant:
Whitmire Micro-Gen Research Laboratories, Inc.
3568 Tree Court Industrial Blvd.
St. Louis, MO 63122

Substance number: 000000395969
Chemical family: organophosphates
Synonyms: Chlorpyrifos

2. Hazards Identification

Emergency overview

CAUTION:
KEEP OUT OF REACH OF CHILDREN.
KEEP OUT OF REACH OF DOMESTIC ANIMALS.
HARMFUL IF SWALLOWED.
HARMFUL IF INHALED.
HARMFUL IF ABSORBED THROUGH SKIN.
Do not breathe vapours/mists.
Avoid contact with the skin, eyes and clothing.
Wash thoroughly after handling.

See Product Label for additional precautionary statements.

State of matter: liquid
Colour: beige to yellow
Odour: of mercaptans

Potential health effects

Primary routes of exposure:

Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquified gases.

Acute toxicity:

Relatively nontoxic after single ingestion. Slightly toxic after short-term skin contact.

Safety Data Sheet

DURAGUARD ME

Revision date : 2012/03/02
Version: 2.0

Page: 2/9
(30472208/SDS_CPA_US/EN)

Irritation / corrosion:

May cause slight but temporary irritation to the eyes. May cause slight irritation to the skin.

Sensitization:

Skin sensitizing effects were not observed in animal studies.

Signs and symptoms of overexposure:

inhibition of cholinesterase

weakness, muscular spasms, twitching, headache, tightness in the chest, difficulty breathing, shortness of breath, chest discomfort, disturbance of vision, nonreactive pinpoint pupils, salivation, nausea, vomiting, diarrhea, abdominal cramps, urination, perspiration

Risk of decrease in cholinesterase activity. If poisoning is probable, treat the patient immediately. Treatment should be given simultaneously with decontamination procedures in severe cases. Proceed concurrently with decontamination using proper protective gear; for example, chemical resistant gloves (neoprene or nitrile) rather than cotton or leather gloves.

3. Composition / Information on Ingredients

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Chemical name</u>
2921-88-2	20.0 %	chlorpyrifos
	80.0 %	Proprietary ingredients

4. First-Aid Measures

General advice:

First aid providers should wear personal protective equipment to prevent exposure. Remove contaminated clothing. Move person to fresh air. If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or physician for treatment advice. Have the product container or label with you when calling a poison control center or doctor or going for treatment.

If inhaled:

Remove the affected individual into fresh air and keep the person calm.

If on skin:

Rinse skin immediately with plenty of water for 15 - 20 minutes.

If in eyes:

Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing.

If swallowed:

Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Do not induce vomiting. Have person sip a glass of water if able to swallow.

Note to physician

Antidote:

Administer atropine. Pralidoxime chloride (2-PAM) is antidotal when administered early, and in conjunction with antidote.

Treatment:

Pralidoxime chloride (2-PAM, PROTOPAM chloride) may be effective as an adjunct to atropine. Use according to label directions. Before administering pralidoxime chloride, obtain a blood sample for cholinesterase analysis. Adjusting for age and weight, pralidoxime may be administered as a continuous infusion after a loading dose or using a bolus method. Clear airway and provide oxygen before administering atropine. Tissue oxygenation should be improved as much as possible before administering atropine, so as to minimize the risk of arrhythmia. Give atropine intravenously (IV), or if not immediately possible IV, through an alternative route such as an endotracheal tube or intramuscularly (IM). Give atropine intramuscularly or intravenously, depending on severity of poisoning. Atropine may be administered through an alternative route such as an endotracheal tube. Avoid opiates, parasympathomimetic agents (e.g.

Safety Data Sheet

DURAGUARD ME

Revision date : 2012/03/02
Version: 2.0

Page: 3/9
(30472208/SDS_CPA_US/EN)

succinylcholine), theophylline, reserpine and or phenothiazines. The dosage for atropine is as follows: 1 to 2 mg/kg initially IV in adults (or 0.05 mg/kg in children under 12 years) then give appropriate doses every 15 minutes until excessive secretions and sweating have been controlled. Use soap (preferably Tincture Green Soap) and water or dilute hypochlorite solution for decontaminating skin. Suction oral secretions and emesis to avoid aspiration. Artificial respiration or oxygen administration may be necessary. Observe patient continuously for at least 72 hours. Allow no further exposure to any cholinesterase inhibitor until cholinesterase regeneration has taken place as determined by blood tests.

5. Fire-Fighting Measures

Flash point:	> 212 °C	No flash point - Measurement made up to the boiling point.
Lower explosion limit:		not determined
Upper explosion limit:		not determined

Suitable extinguishing media:
foam, dry powder, carbon dioxide, water spray

Unsuitable extinguishing media for safety reasons:
water jet

Hazards during fire-fighting:
carbon monoxide, carbon dioxide, nitrogen dioxide, nitrogen oxide, Sulphur dioxide, Hydrogen chloride, 2-(ethylthio)ethanol, sulfur oxides, Phosphorus compounds, mercaptans, toxic gases/vapours
If product is heated above decomposition temperature, toxic vapours will be released. The substances/groups of substances mentioned can be released in case of fire. Vapours may form explosive mixture with air.

Protective equipment for fire-fighting:
Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:
Evacuate area of all unnecessary personnel. Contain contaminated water/firefighting water. Do not allow to enter drains or waterways.

6. Accidental release measures

Personal precautions:
Take appropriate protective measures. Clear area. Shut off source of leak only under safe conditions. Extinguish sources of ignition nearby and downwind. Ensure adequate ventilation. Wear suitable personal protective clothing and equipment.

Environmental precautions:
Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater. Contain contaminated water/firefighting water. A spill of or in excess of the reportable quantity requires notification to state, local and national emergency authorities. This product is regulated by CERCLA ('Superfund').

Cleanup:
Dike spillage. Pick up with suitable absorbent material. Spilled substance/product should be recovered and applied according to label rates whenever possible. If application of spilled substance/product is not possible, then spills should be contained, solidified, and placed in suitable containers for disposal. After decontamination, spill area can be washed with water. Collect wash water for approved disposal.

Safety Data Sheet

DURAGUARD ME

Revision date : 2012/03/02
Version: 2.0

Page: 4/9
(30472208/SDS_CPA_US/EN)

7. Handling and Storage

Handling

General advice:

RECOMMENDATIONS ARE FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS. PESTICIDE APPLICATORS & WORKERS must refer to the Product Label and Directions for Use attached to the product. Provide good ventilation of working area (local exhaust ventilation if necessary). Keep away from sources of ignition - No smoking. Keep container tightly sealed. Protect against heat. Handle and open container with care. Do not open until ready to use. Once container is opened, content should be used as soon as possible. Provide means for controlling leaks and spills. Follow label warnings even after container is emptied. The substance/ product may be handled only by appropriately trained personnel. Avoid all direct contact with the substance/product. Avoid contact with the skin, eyes and clothing. Avoid inhalation of dusts/mists/vapours. Wear suitable personal protective clothing and equipment.

Protection against fire and explosion:

The relevant fire protection measures should be noted. Fire extinguishers should be kept handy. Avoid all sources of ignition: heat, sparks, open flame. Avoid extreme heat. Ground all transfer equipment properly to prevent electrostatic discharge. Electrostatic discharge may cause ignition.

Storage

General advice:

Keep only in the original container in a cool, dry, well-ventilated place away from ignition sources, heat or flame. Protect containers from physical damage. Protect against contamination. The authority permits and storage regulations must be observed.

Storage incompatibility:

General advice: Segregate from incompatible substances. Segregate from foods and animal feeds. Segregate from textiles and similar materials.

Storage stability:

Storage temperature: 100 °F

Do not store above indicated temperature for extended periods. If substance/product crystallizes, thaw at room temperature.

8. Exposure Controls and Personal Protection

Users of a pesticidal product should refer to the product label for personal protective equipment requirements.

Components with workplace control parameters

chlorpyrifos

ACGIH

TWA value 0.1 mg/m3 Inhalable fraction and vapor ;
Skin Designation Inhalable fraction and vapor ;
The substance can be absorbed through the skin.

Advice on system design:

Whenever possible, engineering controls should be used to minimize the need for personal protective equipment.

Personal protective equipment

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

Respiratory protection:

Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator. For situations where the airborne concentrations may exceed the level for which an air purifying respirator is effective, or where the levels are unknown or Immediately Dangerous to Life or Health (IDLH), use NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.

Safety Data Sheet

DURAGUARD ME

Revision date : 2012/03/02
Version: 2.0

Page: 5/9
(30472208/SDS_CPA_US/EN)

Hand protection:

Chemical resistant protective gloves, Protective glove selection must be based on the user's assessment of the workplace hazards.

Eye protection:

Safety glasses with side-shields. Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

General safety and hygiene measures:

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS

Wear long sleeved work shirt and long work pants in addition to other stated personal protective equipment. Work place should be equipped with a shower and an eye wash. Handle in accordance with good industrial hygiene and safety practice. Personal protective equipment should be decontaminated prior to reuse. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Take off immediately all contaminated clothing. Store work clothing separately. Hands and/or face should be washed before breaks and at the end of the shift. No eating, drinking, smoking or tobacco use at the place of work. Keep away from food, drink and animal feeding stuffs.

9. Physical and Chemical Properties

Form:	liquid		
Odour:	of mercaptans		
Colour:	beige to yellow		
pH value:	7.5 - 8.5	(20 °C)	(as such)
Freezing point:	approx. 32 °F		
Boiling point:	approx. 212 °F		
Vapour pressure:	23 hPa	(20 %(m))	Information applies to the solvent.
Density:	0.95 g/cm3	(20 °C)	
Vapour density:			not determined
Partitioning coefficient n-octanol/water (log Pow):			not applicable
Solubility in water:			dispersible

10. Stability and Reactivity

Conditions to avoid:

Avoid all sources of ignition: heat, sparks, open flame. Avoid prolonged storage. Avoid electro-static discharge. Avoid contamination. Avoid prolonged exposure to extreme heat. Avoid extreme temperatures.

Substances to avoid:

oxidizing agents, bases, strong acids

Hazardous reactions:

The product is chemically stable.

Decomposition products:

carbon monoxide, carbon dioxide, nitrogen dioxide, nitrogen oxide, Sulphur dioxide, ethanethiol, hydrogen sulphide, 2-(ethylthio)ethanol, Prolonged thermal loading can result in products of degradation being given off.

Thermal decomposition:

Possible thermal decomposition products:

Safety Data Sheet

DURAGUARD ME

Revision date : 2012/03/02
Version: 2.0

Page: 6/9
(30472208/SDS_CPA_US/EN)

carbon monoxide, carbon dioxide, nitrogen dioxide, nitrogen oxide, Sulphur dioxide, ethanethiol, hydrogen sulphide, 2-(ethylthio)ethanol
Stable at ambient temperature. If product is heated above decomposition temperature toxic vapours may be released. To avoid thermal decomposition, do not overheat.

Corrosion to metals:

Corrosive effects to metal are not anticipated.

Oxidizing properties:

Based on its structural properties the product is not classified as oxidizing.

11. Toxicological information

Acute toxicity

Oral:

Type of value: LD50
Species: rat
Value: > 5,000 mg/kg

Inhalation:

Information on: Chlorpyrifos
Type of value: LC50
Species: rat (male/female)
Value: > 0.2 mg/l
Exposure time: 4 h
Highest concentration available for testing. No mortality was observed.

Dermal:

Type of value: LD50
Species: rabbit
Value: > 2,000 mg/kg

Irritation / corrosion

Skin:

Species: rabbit
Result: non-irritant

Eye:

Species: rabbit
Result: mildly irritating

Sensitization:

Species: guinea pig
Result: Skin sensitizing effects were not observed in animal studies.

Genetic toxicity

Information on: chlorpyrifos
No mutagenic effect was found in various tests with bacteria, microorganisms and mammalian cell culture.

Carcinogenicity

Information on: chlorpyrifos
Not carcinogenic.

Safety Data Sheet

DURAGUARD ME

Revision date : 2012/03/02
Version: 2.0

Page: 7/9
(30472208/SDS_CPA_US/EN)

Reproductive toxicity

Information on: chlorpyrifos
The results of animal studies gave no indication of a fertility impairing effect.

Development:

Information on: chlorpyrifos
No indications of a developmental toxic / teratogenic effect were seen in animal studies.

12. Ecological Information

Fish

Information on: chlorpyrifos
Acute:
Oncorhynchus mykiss/LC50 (96 h): = 7.1 ppb
Lepomis macrochirus/LC50 (96 h): = 1.8 - 2.4 ppb
Ictalurus punctatus, syn: I. robustus/LC50 (96 h): = 280 ppb

Aquatic invertebrates

Information on: chlorpyrifos
Acute:
Daphnia magna/EC50 (48 h): 0.1 ppb

Aquatic plants

Information on: chlorpyrifos
Toxicity to aquatic plants:
green algae/EC50: 140 - 300 ppb

13. Disposal considerations

Waste disposal of substance:

Pesticide wastes are regulated. If pesticide wastes cannot be disposed of according to label instructions, contact the State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container disposal:

Rinse thoroughly at least three times (triple rinse) in accordance with EPA recommendations. Consult state or local disposal authorities for approved alternative procedures such as container recycling. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

14. Transport Information

Land transport

USDOT

Hazard class: 9
Packing group: III
ID number: UN 3082

Safety Data Sheet

DURAGUARD ME

Revision date : 2012/03/02
Version: 2.0

Page: 8/9
(30472208/SDS_CPA_US/EN)

Hazard label: 9, EHSM
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(contains CHLORPYRIFOS)

Sea transport

IMDG

Hazard class: 9
Packing group: III
ID number: UN 3082
Hazard label: 9, EHSM
Marine pollutant: YES
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(contains CHLORPYRIFOS)

Air transport

IATA/ICAO

Hazard class: 9
Packing group: III
ID number: UN 3082
Hazard label: 9, EHSM
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(contains CHLORPYRIFOS)

Further information

DOT: This product is regulated if the amount in a single receptacle exceeds the Reportable Quantity (RQ).
Please refer to Section 15 of this MSDS for the RQ for this product.

15. Regulatory Information

Federal Regulations

Registration status:

Chemical TSCA, US blocked / not listed

Crop Protection TSCA, US released / exempt

EPCRA 311/312 (Hazard categories): Acute; Chronic

CERCLA RQ

1 LBS

CAS Number

2921-88-2

Chemical name

chlorpyrifos

State regulations

State RTK

MA, NJ, PA

CAS Number

2921-88-2

Chemical name

chlorpyrifos

16. Other Information

Refer to product label for EPA registration number.

Recommended use: insecticide

Safety Data Sheet

DURAGUARD ME

Revision date : 2012/03/02
Version: 2.0

Page: 9/9
(30472208/SDS_CPA_US/EN)

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

MSDS Prepared by:

BASF NA Product Regulations
msds@basf.com
MSDS Prepared on: 2012/03/02

IMPORTANT: WHILE THE DESCRIPTIONS, DESIGNS, DATA AND INFORMATION CONTAINED HEREIN ARE PRESENTED IN GOOD FAITH AND BELIEVED TO BE ACCURATE , IT IS PROVIDED FOR YOUR GUIDANCE ONLY. BECAUSE MANY FACTORS MAY AFFECT PROCESSING OR APPLICATION/USE, WE RECOMMEND THAT YOU MAKE TESTS TO DETERMINE THE SUITABILITY OF A PRODUCT FOR YOUR PARTICULAR PURPOSE PRIOR TO USE. NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH, OR THAT THE PRODUCTS, DESIGNS, DATA OR INFORMATION MAY BE USED WITHOUT INFRINGING THE INTELLECTUAL PROPERTY RIGHTS OF OTHERS. IN NO CASE SHALL THE DESCRIPTIONS, INFORMATION, DATA OR DESIGNS PROVIDED BE CONSIDERED A PART OF OUR TERMS AND CONDITIONS OF SALE. FURTHER, YOU EXPRESSLY UNDERSTAND AND AGREE THAT THE DESCRIPTIONS, DESIGNS, DATA, AND INFORMATION FURNISHED BY OUR COMPANY HEREUNDER ARE GIVEN GRATIS AND WE ASSUME NO OBLIGATION OR LIABILITY FOR THE DESCRIPTION, DESIGNS, DATA AND INFORMATION GIVEN OR RESULTS OBTAINED, ALL SUCH BEING GIVEN AND ACCEPTED AT YOUR RISK.
END OF DATA SHEET