

----- MATERIAL SAFETY DATA SHEET -----
 'CYMBUSH 250EC'
 Zeneca

'CYMBUSH 250EC'
 Version: 1
 Date issued: 06/14/99

 Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Company: ZENECA Agro
 250-3115 12th Street NE,
 Calgary,
 Alberta T2E 7J2
 Phone number: (403) 219-5400
 Emergency phone: 1-800-327-8633 (1-800-FASTMED)
 Fax: (403) 219-5401
 Name used on label: 'CYMBUSH 250EC'
 Product use: A pyrethroid insecticide. An emulsifiable
 concentrate.
 A Registered Trade Mark of a Zeneca Group Company.

 Section 2 - COMPOSITION/INFORMATION ON INGREDIENTS

Identity CAS-no. Typical % Other information

CYPERMETHRIN TECHNICAL
 52315-07-8 20 .. 30 % w/w
 Petroleum solvent naphtha, light aromatics
 64742-95-6 55 .. 65 % w/w
 Alkylphenol Ethoxylate
 68412-54-4 1 .. 5 % w/w
 butanol
 35296-72-1 5 .. 10 % w/w
 Ingredients not precisely identified are proprietary or non
 hazardous. Values are not product specifications.

 Section 3 - HAZARDS IDENTIFICATION

Physical hazards: None
 Health hazards: Toxic by inhalation, in contact with skin
 and if swallowed. Irritating to eyes and skin. May cause
 sensitization by skin contact.

 Section 4 - FIRST AID MEASURES

GENERAL ADVICE: If you feel unwell, seek medical advice
 (show the label where possible).
 IF IN EYES: Immediately flush eyes with running water for a
 minimum of 20 minutes. Hold eyelids open during flushing.
 If irritation persists, repeat flushing. Obtain medical
 attention immediately.
 IF ON SKIN: Flush skin with running water for a minimum of
 20 minutes. Start flushing while removing contaminated
 clothing. If irritation persists, repeat flushing. Obtain
 medical attention immediately.
 IF SWALLOWED: Provided the patient is conscious, wash out
 mouth with water. Immediately contact Zeneca's Emergency
 Information Network at 1-800-F-A-S-T-M-E-D (327-8633). Do
 not induce vomiting. Vomiting should only be induced
 under the direction of a physician or a poison control
 center. If spontaneous vomiting occurs, have victim lean
 forward with head down to avoid breathing in of vomitus,
 rinse mouth and administer water. Immediately transport
 victim to an emergency facility.
 IF INHALED: Remove victim to fresh air. If not breathing,
 give artificial respiration, preferably mouth-to-mouth.
 If breathing is labored, give oxygen. Obtain immediate
 medical attention.
 MEDICAL ADVICE: This product contains materials that may
 cause severe pneumonitis if aspirated. If ingestion has
 occurred less than 2 hours earlier, carry out careful
 gastric lavage; use endotracheal cuff if available, to
 prevent aspiration. Observe patient for respiratory
 difficulty from aspiration pneumonitis. Give artificial
 resuscitation and appropriate chemotherapy if respiration
 is depressed. Symptomatic treatment and supportive
 therapy as indicated.

Section 5 - FIRE FIGHTING MEASURES

Flash point: > 38 deg C
 Flammable limits (LEL): 1 % v/v
 Flammable limits (UEL): 6 % v/v
 Autoignition temperature: Not available. (345 deg C N-Butyl Alcohol)
 Decomposition temperature: Not available.
 Explosive properties:
 LEL: Not applicable
 EXTINGUISHING MEDIA: For small fires, use foam, carbon dioxide or dry powder extinguishant. For large fires, use foam or water-fog; avoid use of water jet. Contain run-off water with, for example, temporary earth barriers.
 FIRE AND EXPLOSION HAZARDS: Flammable.
 Keep fire exposed containers cool by spraying with water.
 PROTECTIVE EQUIPMENT: A self contained breathing apparatus and suitable protective clothing should be worn in fire conditions.
 Unusual fire and explosion hazards: The vapour is heavier than air and may travel a considerable distance to a source of ignition.

Section 6 - ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Ensure suitable personal protection during removal of spillages. This means wearing a face mask that gives protection against organic vapours, eye protection, chemically resistant gloves, boots and coveralls.
 METHODS FOR CLEANING UP: Generously cover the contaminated areas with common, household detergent (e.g. TIDE, registered trademark of Proctor and Gamble Co.). Using a stiff brush and small amounts of water, work the detergent into the remaining spilled material forming a slurry. Brush the slurry into cracks and crevices and allow to stand for 2-3 minutes. Be careful to completely avoid skin or eye contact. Do not splatter on oneself or bystanders. Seal drum and dispose of contaminated material in a facility permitted for hazardous waste. Large spills should be handled according to a spill plan. Otherwise, in case of emergency call, day or night, 613-996-6666, CANUTEC.
 ADDITIONAL INFORMATION: Spillages or uncontrolled discharges into water courses must be alerted to the appropriate regulatory body.

Section 7 - HANDLING AND STORAGE

SAFE HANDLING ADVICE: Avoid breathing vapors or spray mist. Use normal good industrial hygiene and housekeeping practices.
 REQUIREMENTS FOR STORAGE ROOMS: Keep in original containers, tightly closed and locked up. Keep out of the reach of children and away from food.
 Storage Temperature: Ideal storage temperature is 10-27 Deg. C. Do not expose sealed containers to temperatures above 40 Deg. C.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure limits
 OES/HSE butanol
 15 min STEL 50 ppm
 154 mg/m3
 Sk: Can be absorbed through skin
 OES/HSE Mixed Hydrocarbon Solvents
 8 hr TWA 150 mg/m3
 Occupational exposure standards: Zeneca operates its facilities such that employee exposure to Cypermethrin is kept below 0.5 mg/m3 8-hour TWA.
 ENGINEERING CONTROLS: If needed, use local exhaust to keep exposures to a minimum.
 EYE PROTECTION: Eye contact with the material should be avoided through the use of chemical safety glasses, goggles or a faceshield, selected in regard to exposure potential.
 BODY PROTECTION: Gloves and protective clothing made from neoprene should be impervious under conditions of use.
 RESPIRATORY PROTECTION: Use MSHA-NIOSH approved

respirator for pesticides. Where potential exposure under the use conditions necessitates higher level of protection, use a full-face positive pressure air supplied respirator.
Other protective equipment: Eyewash station and safety shower in work area

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Form: liquid
Color: amber brown
Odor: aromatic
Boiling point: Not available. (152-171 deg C approx. solvent)
Melting point: Not applicable
Freezing temperature: < -20 deg C
Do not allow product to freeze.
Vapor Pressure: Not available. at 20 deg C
Method: mmHg (4 N-Butyl Alcohol)
Evaporation Rate: = .2 (solvent)
Vapour density: Not available. (air = 1)(4 solvents)
Specific gravity: 0.98
Solubility: emulsifiable in/with water Not available.
Solubility: in/with other Not available.
pH-value (quant.): Not available.
Threshold odour: Not available. ppm (11 N-Butyl Alcohol)
Volatile by volume: approx 65

Section 10 - STABILITY AND REACTIVITY

HAZARDOUS REACTIONS (CONDITIONS TO AVOID)

Stability: Stable at room temperature.
Incompatibility: Strong oxidizing agents. Acids and alkaline materials.
Hazardous polymerization: Will not occur.
Conditions to avoid: Keep away from heat. Keep away from sources of ignition - No Smoking.

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition products are toxic and may include hydrocarbons, ammonia, organic and acid halides, oxides of carbon, nitrogen and sulphur.

Section 11 - TOXICOLOGICAL INFORMATION

ACUTE TOXICITY (LETHAL DOSES)

LD50 Oral rat
Dose: 680 mg/kg
Additional inform.: Irritant and can cause nausea and vomiting.
LD50 Dermal rabbit
Dose: > 4000 mg/kg
Additional inform.: May cause skin irritation. In humans may cause tingling or numbness in exposed area (paraesthesia). The effect may result from splash, aerosol or transfer to the face from contaminated gloves and hands. This effect is transient, lasting up to 24 hours. There is no evidence of any long term or cumulative effects following repeated contamination. Repeated and/or prolonged contact may cause skin sensitization.

Inhalation
Additional inform.: High concentrations of this product are irritating to the respiratory tract.

LC50 Inhalation rat
Dose: 48 mg/m³/4H

Additional inform.: Cypermethrin

LC50 Inhalation rat
Dose: 3800 mg/m³/4H

Additional inform.: Aromatic Hydrocarbons

LC50 Inhalation rat
Dose: 8000 ppm/4H

Additional inform.: N-Butyl Alcohol

ACUTE TOXICITY (IRRITATION, SENSITIZATION ETC.)

Eye contact

Results: SEVERE IRRITANT

GENERAL INFORMATION ABOUT ACUTE OR OTHER TOXICITIES

Other effects of overexposure: Pyrethroids may produce non-specific symptoms such as nausea, vomiting, abdominal pain and diarrhea. Large doses may cause disturbance of the nervous system with tremors, ataxia,

weakness of limbs, convulsions, coma, and death from respiratory depression. Dermal contact with Pyrethroids in the facial area may cause a subjective sensation of tingling or numbness (paraesthesia). There is no evidence of any long-term or cumulative effects on the skin. Aromatic Hydrocarbons cause bone marrow depression and increase the fragility of red blood cells. Sensitization of the heart muscle can occur, but it is very rare. Sensitization is the process whereby a biological change occurs in the individual because of previous exposure to a substance and, as a result, the individual reacts more strongly when subsequently exposed to the substance. Once sensitized, an individual can react to extremely low airborne levels, even below the TLV, or to skin contact.

Peripheral neuropathy is a progressive disorder of the nervous system characterized by sensory and motor abnormalities, muscle spasms, weakness and pain in the arms and legs, numbness and tingling of the fingers and toes and paralysis.

General information: The ingredient(s) of this product is (are) not classified as carcinogenic by ACGIH or IARC, not regulated as carcinogens by OSHA and not listed as carcinogens by NTP. It is unlikely to present a carcinogenic hazard to man.

There is no evidence of mutagenic potential. There is also no evidence of adverse reproductive effects, teratogenicity or fetotoxicity in the absence of maternal toxicity.

Section 12 - ECOLOGICAL INFORMATION

ECOTOXICITY

Assessment: Very toxic to aquatic organisms.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Method: Do not contaminate ponds, waterways or ditches with chemical or used containers. Dispose of in facility permitted for hazardous waste.

Container disposal: Empty container retains product residue. Triple rinse, or equivalent, empty container, return rinse water to dilution mixture, and dispose of dilution mixture as a hazardous waste if it cannot be disposed of by use according to label instructions. Do not reuse container. Offer it for recycling or reconditioning, or puncture and dispose of in properly permitted landfill.

Section 14 - TRANSPORT INFORMATION

TRANSPORT/ADDITIONAL INFORMATION

Road (TDG) transport: Flammable Liquid, N.O.S. (contains substituted benzenoid hydrocarbons, cypermethrin), 3, UN1993, PG III.

Section 15 - REGULATORY INFORMATION

HAZARDOUS INGREDIENTS

butanol

Other regulations, restrictions and prohibitions
Pest Control Products (PCP) Act Registration No.: 19170

Section 16 - OTHER INFORMATION

The information contained herein is offered only as a guide to the handling of this specific material and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive and the manner and conditions of use and handling may involve other and additional considerations. No warranty of any kind is given or implied and Zeneca Corp. will not be liable for any damages, losses, injuries or consequential damages which may result from the use of or reliance on any information contained herein. This Material Safety Data Sheet is valid for three years. This product is under the jurisdiction of the Pest Control Products Act and is exempt from the requirements for a WHMIS compliant MSDS. Hazardous properties of all ingredients have been considered in the preparation of this MSDS. Read the entire MSDS for the

complete hazard evaluation of this product.
Zeneca Agro (403) 219-5400

Prepared by: Zeneca Ag Products (302) 886-5590

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amendment from the previous version.

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COMPAS Code: 39470092
