



DuPont
Material Safety Data Sheet

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M0000093 "ASSURE" II HERBICIDE Revised 17-JUL-1997 Printed 5-AUG-1997

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

"ASSURE" is a registered trademark of DuPont.

Corporate MSDS Number : DU003046

Tradenames and Synonyms

"MATADOR" HERBICIDE
QUIZALOFOP P-ETHYL

Company Identification

MANUFACTURER/DISTRIBUTOR
DuPont
1007 Market Street
Wilmington, DE 19898

PHONE NUMBERS

Product Information : 1-800-441-7515
Transport Emergency : CHEMTREC 1-800-424-9300
Medical Emergency : 1-800-441-3637

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
QUIZALOFOP P-ETHYL (ETHYL(R)-2-[4-[(6-CHLORO-2-QUINOXALIN-2-YL)OXY]PHENOXY]PROPIONATE)	100646-51-3	10.3
INERT INGREDIENTS AND RELATED COMPOUNDS		89.7
* NAPHTHALENE (May contain ~11% naphthalene)	91-20-3	
* N-METHYL-2-PYRROLIDONE (May contain less than 8% N-methyl-2-pyrrolidone)	872-50-4	

* Disclosure as a toxic chemical is required under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

HAZARDS IDENTIFICATION

Emergency Overview

DANGER! Causes severe eye irritation. May irritate skin, nose, and throat. May be harmful if absorbed through the skin, swallowed, or inhaled. Avoid contact with skin, eyes, or clothing. Avoid breathing vapors or spray mist.

Potential Health Effects

ANIMAL DATA

Acute Oral LD50: 5,900 mg/kg (rats, male)
4,100 mg/kg (rats, female)
Low level of toxicity by ingestion.

Acute Dermal LD50: >2,000 mg/kg (rabbit)
Slightly to moderately toxic by contact.

SKIN IRRITATION AND SENSITIZATION

Product is a moderate skin irritant; but not considered a skin sensitizer.

INHALATION

4 hour LC50: 2.6 mg/L (rats, male); 4.4 mg/L (rats, female); 3.5 mg/L (rats combined)

EYE CONTACT

Severe irritant. Corneal opacity remained in one of 6 animals after day 21. All other animals were normal by this day.

CHRONIC STUDIES - ACTIVE INGREDIENT

(Conducted with the racemic mixture of isomers)

2-Year Feeding Study (Rats): Dietary concentrations were 0, 25, 100 or 400 ppm. The no-observable-effect-level (NOEL) was considered to be 25 ppm (approximately 1.25 mg/kg/day) based on liver effects observed at 100 and 400 ppm. There was a slight but non-significant increase in female liver tumors at 400 ppm. The product was considered to be nononcogenic in this species.

18-Month Feeding Study (Mice): Dietary concentrations were 0, 2, 10, 80 and 320 ppm. The NOEL was considered to be 10 ppm (approximately 1.5 mg/kg/day) based on effects in liver and testes present at 80 and 320 ppm.

An increased incidence of liver carcinomas was observed in male mice and an increased incidence of ovarian tumors (leuteomas and granulosa cell tumors) was observed in female

(HAZARDS IDENTIFICATION - Continued)

mice. These effects were only observed at the highest dose tested 320 ppm (approximately 48 mg/kg/day) and were not statistically significant when compared to tumor incidences in the untreated mice.

1-Year Feeding Study (Dog): Dietary concentrations were 0, 25, 100 and 400 ppm. The NOEL was considered to be 400 ppm (approximately 30 mg/kg/day). There were no compound-related effects.

REPRODUCTION (Rats)

Tests ran at levels of 0, 25, 100 and 400 ppm. Decreased body weights were observed for parents and offspring in the 400 ppm group. Histologic liver changes and increased liver weights occurred at 100 and 400 ppm. NOEL was 25 ppm (approximately 1.25 mg/kg/day).

TERATOGENICITY (Rabbit and Rat)

Dose levels were 0, 7, 15, 30 and 60 mg/kg/day. Not teratogenic or embryotoxic at any level. Body weight gain and other toxic effects were observed in pregnant rabbits at 60 mg/kg/day. Overall NOEL was 30 mg/kg/day. Rat dose levels were 30, 100, or 300 mg/kg/day. This product was not teratogenic at any level. Reduced body weight gains were observed for dams at 300 mg/kg. Offspring of this treatment group exhibited reduced survival and a transient increase in skeletal variations. The overall NOEL was 30 mg/kg/day.

MUTAGENICITY

Negative results in the following tests: Ames and Chinese hamster ovary (CHO) test for gene mutations; CHO and mouse micronucleus tests for chromosomal aberrations; DNA repair assays in *B. subtilis* and rat liver cells; Sister Chromatid Exchange Assay in Chinese hamster cells.

SUBCHRONIC TOXICITY - NAPHTHALENE

Ingestion: Toxicity described in animals from exposure by ingestion include biochemical alterations and increased weight of the liver, kidney changes, anemia, retinal atrophy and lens opacity.

MUTAGENIC AND DEVELOPMENTAL HAZARDS - NAPHTHALENE

Animal testing indicates that this compound does not have developmental toxicity when administered by ip route. Tests in bacterial cell cultures demonstrate no mutagenic activity.

HUMAN HEALTH EFFECTS OF OVEREXPOSURE - NAPHTHALENE

(HAZARDS IDENTIFICATION - Continued)

Symptoms from excessive prolonged inhalation exposure to naphthalene may include headache, dizziness and confusion.

Ingestion of naphthalene may initially include abnormal liver function with jaundice; abnormal kidney function with bloody urine or flank pain; abnormal blood forming system function with anemia; or red blood cell destruction. Hemolysis may occur in G6PD (Glucose-6-phosphate dehydrogenase) deficient individuals, possibly followed by acute renal failure.

Higher exposures may lead to these effects: lens opacity; temporary nervous system depression with anaesthetic effects such as dizziness, headache, confusion, incoordination, and loss of consciousness; coma; and fatality from gross overexposure (children up to age six are more susceptible because of rapid absorption). Significant skin permeation, and systemic toxicity, after contact appears unlikely. There are inconclusive or unverified reports of human sensitization. Individuals with G6PD deficiency or preexisting diseases of the liver and kidneys may have increased susceptibility to the toxicity of excessive exposures.

TOXICOLOGICAL EFFECTS - N-METHYL-2-PYRROLIDONE

In animal testing this material has not caused carcinogenicity. Animal data show developmental effects only at or near levels producing other toxic effects in the adult animal. This material is not considered a unique developmental hazard to the conceptus. Reproductive data on adult animals show interference with reproduction only at levels which produce other toxic effects in the adult animal. This material is not considered a unique reproductive hazard. Tests have shown that this material does not cause genetic damage in bacterial or mammalian cell cultures.

Human experience or case reports have identified the following potential effects from overexposure to n-methyl-2-pyrrolidone: prolonged contact may cause severe skin irritation with burning, redness, swelling, pain, blisters, cracking, or rash. There are inconclusive or unverified reports of human sensitization to this solvent.

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

FIRST AID MEASURES

First Aid

INHALATION

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

SKIN CONTACT

In case of contact, immediately wash skin with soap and water. Wash contaminated clothing before reuse.

EYE CONTACT

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

INGESTION

If swallowed, do not induce vomiting. Immediately give 2 glasses of water. Never give anything by mouth to an unconscious person. Call a physician.

Notes to Physicians

Activated charcoal mixture may be administered. To prepare activated charcoal mixture, suspend 50 grams activated charcoal in 400 mL water and mix thoroughly. Administer 5 mL/kg, or 350 mL for an average adult.

FIRE FIGHTING MEASURES

Flammable Properties

Flash Point : 98.9 C (210 F)
Method : Setaflash

Vapor forms explosive mixture with air. Heating can release vapors which can be ignited.

Extinguishing Media

Water Spray, Foam, Dry Chemical, CO2.

Fire Fighting Instructions

Evacuate personnel to a safe area. Keep personnel removed and upwind of fire. Wear self-contained breathing apparatus. Use water spray. Cool tank/container with water spray.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Initial Containment

Dike spill. Prevent material from entering sewers, waterways, or low areas.

Spill Clean Up

Soak up with sawdust, sand, oil dry or other absorbent material. Shovel or sweep up.

Accidental Release Measures

If spill area is on ground near trees or other valuable plants remove top 2 inches of soil after initial clean up.

HANDLING AND STORAGE

Handling (Personnel)

Do not get in eyes. Avoid breathing vapors or mist. Avoid contact with skin. Avoid contact with clothing. Wash thoroughly after handling. Wash clothing after use. Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material.

USERS SHOULD: Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove personal protective equipment immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Handling (Physical Aspects)

Keep away from heat, sparks and flames.

Storage

Store in a well ventilated place. Keep container tightly closed. Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material.

Do not subject to temperatures below 32 deg F.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Use only with adequate ventilation. Keep container tightly closed.

Personal Protective Equipment

Always follow label instructions when using this product.

Applicators and other handlers must wear:

Long-sleeved shirt and long pants
Chemical-resistant gloves, such as barrier laminate or
Viton
Shoes plus socks
Protective eyewear

Discard clothing or other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

Coveralls
Chemical-resistant gloves, such as barrier laminate or
Viton
Shoes plus socks
Protective eyewear

Exposure Guidelines

Applicable Exposure Limits

QUIZALOFOP P-ETHYL

PEL (OSHA) : None Established
TLV (ACGIH) : None Established
AEL * (DuPont) : 2 mg/m³, 8 Hr. TWA, total dust
WEEL (AIHA) : None Established

NAPHTHALENE

PEL (OSHA) : 10 ppm, 50 mg/m³, 8 Hr. TWA
TLV (ACGIH) : 10 ppm, 52 mg/m³, 8 Hr. TWA, A4
STEL 15 ppm, 79 mg/m³, A4
AEL * (DuPont) : None Established

N-METHYL-2-PYRROLIDONE

(Applicable Exposure Limits - Continued)

PEL (OSHA) : None Established
TLV (ACGIH) : None Established
AEL * (DuPont) : 25 ppm, 8 Hr. TWA
WEEL (AIHA) : 10 ppm, 8 Hr. TWA, Skin

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Solubility in Water : Emulsifiable concentrate
pH : 5.6 (1% wt/wt in water)
Odor : Aromatic hydrocarbon
Form : Liquid
Color : Dark amber
Specific Gravity : 1.02

STABILITY AND REACTIVITY

Chemical Stability

Stable at normal temperatures and storage conditions.

Incompatibility with Other Materials

None reasonably foreseeable.

Polymerization

Polymerization will not occur.

ECOLOGICAL INFORMATION

Ecotoxicological Information

Aquatic Toxicity

Toxic to aquatic organisms.

DISPOSAL CONSIDERATIONS

Waste Disposal

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Do not flush to surface water or sanitary sewer system.

Pesticides, spray mixture, or rinsate that cannot be used according to label instructions must be disposed of according to applicable Federal, State or Local procedures.

Triple rinse (or equivalent) the container and dispose of in a sanitary landfill or by incineration if allowed by State and Local authorities.

TRANSPORTATION INFORMATION

Shipping Information

DOT/IMO
Proper Shipping Name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE,
LIQUID, N.O.S.
(10% QUIZALOFOP P-ETHYL)
Hazard Class : CLASS 9
UN No. : UN 3082
Special Information : MARINE POLLUTANT
Packing Group : III

Note - this product is NOT REGULATED for domestic non-bulk shipments.

REGULATORY INFORMATION

U.S. Federal Regulations

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : Yes
Chronic : Yes
Fire : No
Reactivity : No
Pressure : No

In the United States this product is regulated by the US Environmental Protection Agency under the Federal Insecticide, Fungicide and Rodenticide Act. It is a violation of federal law to use this product in a manner inconsistent with its labeling.

EPA Reg. No. 352-541

OTHER INFORMATION

NFPA, NPCA-HMIS

NFPA Rating
Health : 1
Flammability : 1
Reactivity : 0

NPCA-HMIS Rating
Health : 2
Flammability : 1
Reactivity : 0

Personal Protection rating to be supplied by user depending on use conditions.

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS : DuPont
Address : Agricultural Products
:
Wilmington, DE 19898
Telephone : 800-441-7515

Indicates updated section.

End of MSDS