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DuPont
Material Safety Data Sheet

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M0000481 "DuPont" "STEADFAST" ATZ HERBICIDE
Revised 1-OCT-2007

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

STEADFAST is a registered trademark of DuPont.

"DuPont" is a trademark of DuPont.

Tradenames and Synonyms

DUPONT STEADFAST ATZ
STEADFAST ATZ
DPX-G3B65
NICOSULFURON
RIMSULFURON
ATRAZINE

Company Identification

MANUFACTURER/DISTRIBUTOR
DuPont
1007 Market Street
Wilmington, DE 19898

PHONE NUMBERS

Product Information : 1-800-441-7515 (outside the U.S.
302-774-1000)
Transport Emergency : CHEMTREC 1-800-424-9300(outside U.S.
703-527-3887)
Medical Emergency : 1-800-441-3637 (outside the U.S.
302-774-1000)

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
NICOSULFURON	111991-09-4	2.7
2-[[(4,6-DIMETHOXYPYRIMIDIN-2-YL)AMINO-CARBOXYL]AMINOSULFONYL]-N,N-DIMETHYL-3-PYRIDINECARBOXAMIDE		
RIMSULFURON	122931-48-0	1.3
N((4,6-DIMETHOXYPYRIMIDIN-2-YL)AMINOCARBONYL)-3-(ETHYLSULFONYL)-2-PYRIDINESULFONAMIDE		
*ATRAZINE	1912-24-9	85.3
2-CHLORO-4-(ETHYLAMINO)-6-(ISOPROPYLAMINO)-S-TRIAZINE		
INERT INGREDIENTS		10.7

(COMPOSITION/INFORMATION ON INGREDIENTS - Continued)

* 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

Caution! Harmful if absorbed through the skin. Avoid contact with skin, eyes or clothing.

Potential Health Effects

Based on animal data, eye contact with Steadfast ATZ may cause eye irritation with discomfort, tearing, or blurring of vision.

Inhalation of the dust may cause irritation of the upper respiratory passages, with coughing.

Ingestion may cause irritation of the mouth and stomach with nonspecific discomfort, such as nausea, or weakness.

Gross over-exposure by inhalation or ingestion may cause abnormal liver function as detected by laboratory tests.

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

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

IF INHALED: No specific intervention is indicated, as the compound is not likely to be hazardous by inhalation. Consult a physician if necessary.

IF SWALLOWED: No specific intervention is indicated, as the product is not likely to be hazardous by ingestion. Consult a physician if necessary.

IF IN EYES: No specific intervention is indicated, as the

(FIRST AID MEASURES - Continued)

product is not likely to be hazardous to the eyes. Consult a physician if necessary.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-441-3637 for emergency medical treatment information.

Notes to Physicians

There is no specific antidote for atrazine. If this product is ingested, induce emesis or lavage stomach. The use of an aqueous slurry of activated charcoal may be considered.

FIRE FIGHTING MEASURES

Flammable Properties

The material poses no explosion hazard in granular form.

Like most organic powders or crystals, under severe dusting conditions, this material may form explosive mixtures in air.

Fire and Explosion Hazards:

Hazardous gases/vapors produced in fire are carbon monoxide, hydrogen cyanide, acetonitrile.

Extinguishing Media

Water, Foam, Dry Chemical, CO2.

Fire Fighting Instructions

Keep personnel removed and upwind of fire. Wear self-contained breathing apparatus. Wear full protective equipment. Runoff from fire control may be a pollution hazard.

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.

Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus. Avoid dust generation.

Initial Containment

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

(ACCIDENTAL RELEASE MEASURES - Continued)

Spill Clean Up

Shovel or sweep up. Avoid causing dust. Dispose of in an approved container. Small spills may be collected with absorbent materials. Flush spill area with water. Do not allow to contaminate groundwater systems.

HANDLING AND STORAGE

Handling (Personnel)

Do not breathe dust. Do not get in eyes, on skin, or on 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/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothes. Remove PPE 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)

Avoid dust generation.

Storage

Store product in original container only. Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Store in a cool, dry place.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Use only with adequate ventilation. Keep container tightly closed.

Do not generate dust.

When applicators use enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

(EXPOSURE CONTROLS/PERSONAL PROTECTION - Continued)

Personal Protective Equipment

Always follow the label instructions when handling this product.

Some materials that are chemical resistant to this product are listed below. If you want more options, follow the instructions for Category A on the EPA chemical resistance category selection chart.

Mixers, loaders, cleaners of equipment or spills, and other handlers exposed to the concentrate must wear:

Coveralls over long sleeved shirt and long pants.

Chemical Resistant Gloves Category A (such as butyl rubber, natural rubber, neoprene rubber, or nitrile rubber) greater than or equal to 14 mils.

Chemical-resistant footwear plus socks.

Chemical-resistant apron.

A NIOSH approved dust mist filtering respirator with any N, R, P, or HE filter or a NIOSH-approved dust mist filtering respirator with approval number prefix TC-21C.

Applicators and all other handlers exposed to the dilute must wear:

Long sleeved shirt and long pants.

Shoes plus socks.

Chemical Resistant Gloves Category A (such as butyl rubber, natural rubber, neoprene rubber, or nitrile rubber) greater than or equal to 14 mils.

See engineering controls for additional requirements.

Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

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 Category A (such as butyl rubber, natural rubber, neoprene rubber, or nitrile rubber), greater than or equal to 14 mils.

Shoes plus socks.

Exposure Guidelines

Applicable Exposure Limits

NICOSULFURON

PEL (OSHA) : None Established
TLV (ACGIH) : None Established
AEL * (DuPont) : 5 mg/m³, 8 & 12 Hr. TWA, respirable dust
dust

RIMSULFURON

PEL (OSHA) : None Established
TLV (ACGIH) : None Established
AEL * (DuPont) : 5 mg/m³, 8 & 12 Hr. TWA, total dust

ATRAZINE

PEL (OSHA) : None Established
TLV (ACGIH) : 5 mg/m³, 8 Hr. TWA, A4
AEL * (DuPont) : 0.5 mg/m³, 8 & 12 Hr. TWA, total dust

* 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

pH : 6.6
Odor : None
Form : Solid, granules
Color : Light beige
Bulk Density : 0.497 g/mL

STABILITY AND REACTIVITY

Chemical Stability

Stable.

Decomposition

Hazardous gases or vapors can be released, including carbon monoxide, hydrogen cyanide, acetonitrile.

Polymerization

Polymerization will not occur.

TOXICOLOGICAL INFORMATION

Animal Data

Steadfast ATZ

Oral LD50: 2245 mg/kg in rats
(Data for a similar formulation)(Slightly toxic)
Inhalation 4 hour LC50: > 5.3 mg/L in rats
(Data for a similar formulation)(Slightly toxic)
Dermal LD50: > 2000 mg/kg in rabbits
(Data for a similar formulation)(Slightly toxic)

Steadfast ATZ is not a skin irritant, but is a slight eye irritant. Animal data for a similar formulation indicates it will not be a skin sensitizer.

ATRAZINE

Effects in animals from single inhalation exposure to an 80% wetttable powder produced no observed signs of toxicity.

Toxicity described in animals from the administration of single oral doses include central nervous system effects, hypoactivity and frequent urination. In a 90-day feeding study in rats, repeated oral dosing of 0.6 to 34 mg/kg bw/day resulted in decreased body, liver and kidney weight in high dose males. Iron pigments were found in the spleen of male and female rats at the high dose level. Long term (2-year) dietary studies in rats resulted in decreased body weight, decrease in red cell parameters (female rats only), and changes in clinical chemical parameters at 0.6 mg/kg bw/day and above. Cardiotoxicity was observed in a long-term study with high doses in dogs.

Atrazine is a weak carcinogen in one female rat strain producing an increased incidence of mammary tumors in a two year feeding study at 3.5 mg/kg bw/day and above. There were no tumors at 1.5 mg/kg/day and below. Atrazine was negative for carcinogenicity in mice and was also negative in a different rat strain. Based on this unique tumor response in a single rat strain and a review of multiple studies, EPA and IARC have concluded that atrazine is not likely to be carcinogenic to humans. Tests in rats and rabbits indicate that Atrazine may have developmental toxicity but only at maternally toxic dose levels of 70 mg/kg/day and above. It is not a unique hazard to the conceptus. Tests in animals demonstrate no reproductive toxicity.

The weight of evidence from bacterial and mammalian cell cultures and from animal tests indicate atrazine does not cause genetic damage.

NICOSULFURON

(TOXICOLOGICAL INFORMATION - Continued)

In a short-term, repeated dose study in rats and mice with the active ingredient, Nicosulfuron, there were no toxicologically significant changes; the NOEL for each study was 2200 mg/kg. In 90-day feeding studies in mice the number of certain types of white blood cells was reduced; however, this was not observed in dogs or rats. This observation was not associated with bone marrow effects was not reproducible in mice exposed up to 18-months to Nicosulfuron. There were no other toxicologically significant changes during these 90-day tests. In a one-year feeding study in dogs Nicosulfuron caused decreased body weight and increased liver weights in male dogs; the NOEL was 5000 ppm for male dogs and 20,000 ppm for female dogs.

Tests in rats and mice with Nicosulfuron demonstrate no carcinogenic activity. Tests in animals demonstrate no reproductive or developmental toxicity. Nicosulfuron has not produced genetic damage in bacterial or mammalian cell cultures or in animals.

RIMSULFURON

Single inhalation exposures to Rimsulfuron caused nonspecific effects such as weight loss, and irritation.

Single dermal exposures to Rimsulfuron caused nonspecific effects such as weight loss.

Repeated and long-term ingestion exposures in animals with Rimsulfuron resulted in non-specific body weight, organ weight, and mild hematologic and clinical chemistry changes. A 1-year feeding study in dogs resulted in mild tracheal effects.

Rimsulfuron did not demonstrate carcinogenic effects in long-term feeding studies in rats or mice. Rimsulfuron did not cause developmental or reproductive effects in animals. Rimsulfuron did not produce genetic damage in bacterial or mammalian cell cultures or in animals.

ECOLOGICAL INFORMATION

Ecotoxicological Information

AQUATIC TOXICITY:

ATRAZINE

96 hour LC50 - Rainbow trout: 4.5 ppm.

AVIAN TOXICITY:

ATRAZINE

LC50 - Bobwhite Quail: > 5000 ppm.

LC50 - Mallard Duck: > 5000 ppm.

AQUATIC TOXICITY:

NICOSULFURON

96 hour LC50 - Bluegill sunfish: > 1000 mg/L.

96 hour LC50 - Rainbow trout: > 1000 mg/L.

(ECOLOGICAL INFORMATION - Continued)

48 hour EC50 - Daphnia magna: > 1000 mg/L.

AVIAN TOXICITY:

NICOSULFURON

Acute Oral LD50 - Bobwhite Quail: > 2250 mg/kg.

Acute Dietary LC50 - Bobwhite Quail: > 5620 ppm.

Acute Dietary LC50 - Mallard Duck: > 5620 ppm.

AQUATIC TOXICITY:

RIMSULFURON

96 hour LC50 - Rainbow trout: > 390 mg/L.

96 hour LC50 - Bluegill sunfish: > 390 mg/L.

96 hour LC50 - Carp: > 900 mg/L.

AVIAN TOXICITY:

RIMSULFURON

Acute Oral LD50 - Bobwhite Quail: > 2250 mg/kg.

Acute Oral LD50 - Mallard Duck: > 2000 mg/kg.

Acute Dietary LC50 - Bobwhite Quail: > 5620 ppm.

Acute Dietary LC50 - Mallard Duck: > 5620 ppm ppm.

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.

Do not contaminate water, food, or feed by disposal. Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

ENVIRONMENTAL HAZARDS

Atrazine, one of the active ingredients of STEADFAST ATZ is a pesticide that can move (seep or travel) through soil and can enter groundwater that may be used as drinking water. Atrazine has been found in groundwater. Users are advised not to apply STEADFAST ATZ where the water table (groundwater) is close to the surface and where the soils are very permeable (i.e., well-drained soils). Local agricultural agencies can provide further information on the type of soil in your area and the location of groundwater.

Container Disposal

For Plastic Containers:

Triple rinse (or equivalent) the container. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or if allowed by state and local authorities, by burning. If burned, stay away from smoke.

For Fiber Sacks:

(DISPOSAL CONSIDERATIONS - Continued)

Completely empty fiber sack by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Dispose of bags at an approved waste disposal facility, in accordance with Federal, state, and local regulations.

For Fiber Drums with Liners:

Completely empty fiber sack by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then dispose of liner in a sanitary landfill or by incineration if allowed by state and local authorities. If drum is contaminated and cannot be reused, dispose of in the same manner.

For Bags Containing Water-Soluble Packets:

Do not reuse the outer box or the resealable plastic bag. When all water-soluble packets are used, the outer packaging should be cleaned and may be disposed of in a sanitary landfill or by incineration, or if allowed by state and local authorities, by open burning. If burned, stay out of smoke. If the resealable plastic bag contacts the formulated product in any way, the bag must be triple-rinsed with clean water. Add the rinsate to the spray tank and dispose of the outer wrap as described above.

For Metal Containers (non aerosols):

Triple rinse (or equivalent) the container. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

For Paper and Plastic Bags: Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

TRANSPORTATION INFORMATION

Shipping Information

DOT/IMO
Proper Shipping Name : NOT REGULATED

REGULATORY INFORMATION

U.S. Federal Regulations

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

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

This product is registered under EPA/FIFRA regulations.

EPA Reg. No. 352-619

RESTRICTED USE PESTICIDE

For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

This product is a restricted use herbicide due to ground and surface water concerns. Users must read and follow all precautionary statements and instructions for use in order to minimize potential for atrazine to reach ground and surface water.

OTHER INFORMATION

NFPA, NPCA-HMIS

NFPA Rating
Health : 2
Flammability : 0
Reactivity : 0

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

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 Crop Protection
Address : Wilmington, DE 19898
Telephone : 1-888-638-7668

Indicates updated section.

(Continued)

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.

End of MSDS