"BASIS" and "BASIS GOLD" HERBICIDE are registered trademarks of DuPont.

Corporate MSDS Number : DU008229

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

Components

Material | CAS Number | %
--- | --- | ---
 nicosulfuron | 111991-09-4 | 1.34
 2-(((4,6-DIMETHOXYPYRIMIDIN-2-YL)AMINOCARBONYL)AMINOSULFONYL))-N,N-DIMETHYL-3-PYRIDINECARBOXAMIDE
 rimsulfuron | 122931-48-0 | 1.34
 N((4,6-DIMETHOXYPYRIMIDIN-2-YL)AMINOCARBONYL)-3-(ETHYLsULFONYL)-2-PYRIDINESULFONAMIDE
 *atrazine | 1912-24-9 | 82.44
 2-CHLORO-4-ETHYLAMINO-6-ISOPROPYLAMINO-S-TRIAZINE
 COMPOUNDS RELATED TO ATRAZINE | | 4.34
 INERT INGREDIENTS | | 10.54

* 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 swallowed, inhaled or absorbed through skin. Causes moderate eye irritation. Do not breathe dust or spray mist. Avoid contact with eyes, skin or clothing.

Potential Health Effects

"BASIS" GOLD Herbicide is a physical blend of two herbicides, "AATREX" "NINE-O" and "DUPONT DPX-79406" Herbicides. Acute toxicity data for each herbicide and multiple-dose toxicity data for each active ingredient are presented, unless otherwise noted.

ACUTE TOXICITY - ATRAZINE ("AATREX" "NINE-O" HERBICIDE):

ANIMAL DATA:

Oral LD50 (rat): 3,090-3,900 mg/kg. Slightly toxic by ingestion.

Dermal LD50 (rabbit): 2 g/kg. Moderately toxic by contact.

Inhalation LC50 (rat): >5.8 mg/L. Low toxicity by inhalation.

Skin Irritation (rabbit): Mildly irritating.

Eye Irritation (rabbit): Minimally irritating.

Skin Sensitization (guinea pigs): Sensitizing.

In testing of atrazine, ataxia, dyspnea and convulsions have been noted in lethally intoxicated experimental animals.

CHRONIC STUDIES - ATRAZINE:

Atrazine was administered in a chronic feeding study in rats at 0, 10, 300 and 1,000 ppm. No compound related effects were noted in any of the treatment groups for gross pathology or histopathology. Atrazine has caused an increase in mammary tumors in female Sprague-Dawley rats, however, this response did not occur in long-term studies with dogs, mice, or male rats and is considered to be strain specific.

SPECIAL STUDIES - ATRAZINE:

Teratology studies in rats and rabbits were negative.

A metabolite of atrazine has caused signs of cardiotoxicity in dogs at high doses.
ACUTE TOXICITY - RIMSULFURON AND NICOSULFURON MIXTURE
(DUPONT DPX-79406 HERBICIDE):

ANIMAL DATA:

Oral LD50 (rat):  >5,000 mg/kg.  Very low toxicity.

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

Inhalation LC50 (rat):  >5.6 mg/L.  Very low toxicity.

Skin Irritation (rabbit):  Slight to mild irritation.  All effects were reversible.

Eye Irritation (rabbit):  Direct contact with concentrated product produced irritation.  Effects were reversible within 72 hours.

Skin Sensitization (guinea pig):  Not a sensitizer

28-Day Rat Dietary Study was conducted with the rimsulfuron/nicosulfuron mixture. The NOEL was 3,000 ppm with liver weight effects at 15,000 ppm.

CHRONIC STUDIES - RIMSULFURON:

2-Year Rat Study - Dietary concentrations were 0, 25, 300, 3,000 or 10,000 ppm.  Rimsulfuron was not oncogenic. The NOEL was 300 ppm for males and 3,000 ppm for females. Reduced body weights and slightly elevated liver weights were observed at higher doses. There were no indications of abnormal liver functions or histology at these doses.

18-Month Mouse Study - Dietary concentrations were 0, 25, 250, 2,500, 7,500 ppm. Rimsulfuron was not oncogenic. The NOEL was 2,500 ppm. Reduced body weights and slight increases in the age-related incidences of cataracts and histological changes in the testes normally observed in this strain of mouse were observed at the high dose.

1-Year Dog Study - Dietary concentrations were 0, 50, 2,500 and 10,000 ppm. The NOEL was 50 ppm. Reduced body weights, clinical chemistry changes and increased liver and kidney weights were observed at the higher doses. There were no indications of abnormal histology in these organs. Minimal to mild microscopic effects in the trachea and/or testes were also observed in some but not all dogs at the two higher dose levels.

SPECIAL STUDIES - RIMSULFURON

Reproduction:  2-Generation Reproduction Study in Rats:
Dietary concentrations were 0, 50, 3,000, and 15,000 ppm.
Rimsulfuron did not affect fertility or reproductive performance. The NOEL was 3,000 ppm. Reduced food consumption and efficiency and reduced body weights were observed at the high dose.

Teratogenicity: Rat Study: Rimsulfuron was administered by oral intubation at 0, 200, 700, 2,000 and 6,000 mg/kg body weight. Rimsulfuron was not teratogenic. The NOEL for the dam was 2,000 mg/kg and 6,000 for the conceptus. Reduced maternal food consumption and body weights were observed at the high dose.

Rabbit Study: Rimsulfuron was administered by oral intubation at 0, 25, 170, 500 and 1,500 mg/kg body weight. Rimsulfuron was not teratogenic. The NOEL was 170 mg/kg for the dam and 500 mg/kg for the conceptus. Reduced material food consumption and/or survival were observed at the higher levels.

Mutagenicity/Genetic Toxicity - Rimsulfuron was not genotoxic in the following assays: Ames Assay; Mutagenicity Tests in Chinese Hamster Ovary Cells (CHO/HGPRT); unscheduled DNA synthesis in rat hepatocytes; chromosomal aberration tests in human lymphocytes; and in vivo mouse micronucleus assay.

CHRONIC STUDIES - NICOSULFURON

Nicosulfuron was tested for chronic toxicity and oncogenicity in rats fed diets that contained 0, 50, 1500, 7,500 and 20,000 ppm for two years. This study was negative with respect to compound-related chronic effects including oncogenicity at the highest dose tested. The NOEL for the rat was therefore 20,000 ppm.

An oncogenicity study was conducted in mice fed diets that contained nicosulfuron at concentrations of 0, 25, 250, 2,500, and 7,500 ppm for 18 months. Nicosulfuron was non-oncogenic and there was also no compound-related chronic toxicity observed in this study. A previous 90-day test in mice resulted in equivocal effects on circulating neutrophils and monocytes at 7,500 and 10,000 ppm. The apparent reduction in circulating cell counts was attributed to margination of these cells in capillaries rather than their increased destruction or reduced production. This effect was not observed in the chronic mouse study nor in other species.

SPECIAL STUDIES - NICOSULFURON

Mutagenicity/Genetic Toxicity - Nicosulfuron was negative in each of the five tests to determine its potential to produce mutagenic and genotoxic effects. These tests include: Ames and in vitro cytogenetics in human
lymphocytes; mouse micronucleus assay; and unscheduled DNA synthesis in rat hepatocytes.

Reproduction and Development Studies - A 2-generation reproduction study was conducted in rats with dietary nicosulfuron concentrations of 0, 250, 5,000, and 20,000 ppm. There were no effects on fertility, lactation indices or offspring health at the high dose. The NOEL was 5,000 ppm based on reduced maternal weight gain and fewer offspring per litter at 20,000 ppm. Effects at the high dose were considered minimal.

In studies to access teratogenicity and developmental toxicity, nicosulfuron was non-teratogenic and was not uniquely toxic to the unborn. In the rat study, the NOEL for maternal and fetotoxicity was 6,000 mg/kg body weight/day, for the highest dose tested. For the rabbit, the NOELs for maternal and fetotoxicity were 100 and 500 mg/kg/day, respectively.

HUMAN HEALTH EFFECTS - "BASIS" GOLD HERBICIDE:

Overexposure to atrazine (a component in "BASIS" GOLD HERBICIDE) by skin contact may include skin irritation with discomfort with rash. The compound has been infrequently associated with skin sensitization in humans. Significant skin permeation, and systemic toxicity, after contact appears unlikely.

Skin Contact: May cause skin irritation with discomfort or rash.

Eye Contact: Eye contact may cause irritation with discomfort, tearing, or blurring of vision.

Inhalation: Excessive exposure to dust may cause nasal and respiratory irritation.

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

Carcinogenicity Information

The following components are listed by IARC, NTP, OSHA or ACGIH as carcinogens.

<table>
<thead>
<tr>
<th>Material</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
<th>ACGIH</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATRAZINE</td>
<td>2B</td>
<td></td>
<td></td>
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</table>
FIRST AID MEASURES

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, wash skin with plenty of soap and water. Get medical attention if irritation persists.

EYE CONTACT
In case of contact, flush eyes with plenty of water. Call a physician if irritation persists.

INGESTION
If ingested, call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching the back of the throat with finger. If person is unconscious, do not give anything by mouth and do not induce vomiting.

Notes to Physicians
There is no specific antidote for atrazine. If a small amount has been ingested, five mg/kg activated charcoal suspension (50 g/400 ml water) can be given. Based on the acute oral LD50 in rats, ingestion of 1/4 pound may be fatal to an adult human.

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. Runoff from fire control may be a pollution hazard.

If area is exposed to fire and conditions permit, let fire burn itself out. Burning chemicals may produce by-products more toxic than the original material. If product is on fire, wear self-contained breathing apparatus and full protective equipment. Use water spray. Control runoff.

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.

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.

Handling (Physical Aspects)

This is a water-dispersible product. It may be packaged in a premeasured water-soluble packet which readily dissolves in water. Exposure to moisture or excessive handling of the soluble packets will cause them to break.
Storage

Store product in original container only. Do not allow material to become wet during storage. Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material. Do not contaminate water, other pesticides, fertilizer, food or feed in storage.

Engineering Controls

Use only with adequate ventilation. Keep container tightly closed.

Do not generate dust.

Personal Protective Equipment

Always follow the label instructions when handling this product.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants.
- Waterproof gloves.
- Chemical-resistant footwear plus socks.

Mixers and Loaders must wear:

- Long-sleeved shirt and long pants.
- Waterproof gloves.
- Chemical-resistant footwear plus socks.
- Protective eyewear.

Respirator

Respiratory protection should not be required for normal use and handling. During abnormal exposures or when there is a chance that the AEL will be exceeded, use of an approved pesticide respirator is recommended.

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.
- Waterproof gloves.
- Chemical-resistant footwear 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

- **Form** : Granular.
- **Color** : Tan.
- **Odor** : Odorless.
- **Density** : 0.47 g/cc
- **Melting Point** : 172-177 °C (342-351 °F) (Atrazine)
- **Vapor Pressure** : 6.6 x 10⁻⁷ mm/Hg (Atrazine)
- **pH** : Not Available
- **Solubility in Water** : Negligible
- **Specific Gravity** : 1.19

**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.
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 - RIMSULFURON:
96-Hour LC50, Rainbow trout: >390 mg/L
96-Hour LC50, Bluegill sunfish: >390 mg/L

AVIAN TOXICITY - RIMSULFURON:
Oral (gavage) LD50 Bobwhite quail: >2250 mg/kg
Oral (gavage) LD50 Mallard duck: >2000 mg/kg
Oral (dietary) LC50 Bobwhite quail: >5620 ppm
Oral (dietary) LC50 Mallard duck: >5620 ppm

AQUATIC TOXICITY - NICOSULFURON:
96-Hour LC50, Bluegill sunfish: >1000 mg/L
96-Hour LC50, Rainbow trout: >1000 mg/L

AVIAN TOXICITY - NICOSULFURON:
Oral LD50, Bobwhite quail: >2250 mg/kg
Dietary LC50, Bobwhite quail: >5620 ppm
Dietary LC50, Mallard duck: >5620 ppm

DISPOSAL CONSIDERATIONS

Waste Disposal

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Pesticide or rinsate that cannot be used or chemically reprocessed must be disposed of according to applicable Federal, State or local procedures. Do not flush to surface water or sanitary sewer system.

Container Disposal

Completely empty bag into application equipment.
(DISPOSAL CONSIDERATIONS - Continued)

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. Refer to applicable Local, State/Provincial, and Federal Regulations, as well as industry Standards.

Water Soluble Packaging: Do not reuse the outer box or the resealable bags. When all water-soluble packets are used, the outer packaging should be clean and may be disposed of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by open burning. If it is burned, stay out of smoke. If the resealable 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.

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

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. 352-585

OTHER INFORMATION

NFPA, NPCA-HMIS

NFPA Rating
Health : 2
Flammability : 0
Reactivity : 0
(Continued)

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 : DU PONT
AGRICULTURAL PRODUCTS
Address : WILMINGTON, DELAWARE 19898
Telephone : 800-441-7515

# Indicates updated section.

End of MSDS