



The MSDS format adheres to the standards and regulatory requirements of the United States and may not meet regulatory requirements in other countries.

DuPont  
Material Safety Data Sheet

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M0000448 DuPont "STEADFAST" HERBICIDE  
Revised 1-OCT-2007  
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CHEMICAL PRODUCT/COMPANY IDENTIFICATION  
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Material Identification

"STEADFAST" is a registered trademark of DuPont.

"DuPont" is a trademark of DuPont.

Tradenames and Synonyms

CORDUS  
DPX-L1D57  
DPX-747

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)

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COMPOSITION/INFORMATION ON INGREDIENTS  
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Components

Material	CAS Number	%
NICOSULFURON 2-[[ (4,6-dimethoxypyrimidin-2-yl)aminocarbonyl] aminosulfonyl-N,N-dimethyl-3- pyridinecarboxamide	111991-09-4	50
RIMSULFURON N((4,6-dimethoxypyrimidin-2-yl)aminocarbonyl)-3- (ethylsulfonyl)-2-pyridine sulfonamide	122931-48-0	25
INERT INGREDIENTS		25

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HAZARDS IDENTIFICATION  
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## Emergency Overview

CAUTION! Causes moderate eye irritation. Harmful if absorbed through skin. Avoid contact with skin, eyes or clothing.

## Potential Health Effects

Based on data from animal tests, Steadfast may cause skin irritation with itching, burning, redness, swelling or rash.

Based on data from animal tests, Steadfast may cause eye irritation with tearing, pain or blurred vision.

Based on data from components, ingestion of high doses of Steadfast may cause reduced white blood cell production; non-specific effects such as nausea and weakness; or 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.

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FIRST AID MEASURES  
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## First Aid

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

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 compound is not likely to be hazardous by ingestion. 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

## (FIRST AID MEASURES - Continued)

medical treatment information.

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FIRE FIGHTING MEASURES  
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## Flammable Properties

The material poses no explosion hazard in granular form.

Not a fire or explosion hazard.

## Extinguishing Media

Water, 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. Wear full protective equipment. Runoff from fire control may be a pollution hazard.

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ACCIDENTAL RELEASE MEASURES  
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## 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.

## Initial Containment

Prevent material from entering sewers, waterways, or low areas. Prevent groundwater contamination. Follow applicable Federal, State/Provincial and Local laws/ regulations.

## Spill Clean Up

Shovel or sweep up. Avoid causing dust.

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HANDLING AND STORAGE  
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## Handling (Personnel)

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.

## (HANDLING AND STORAGE - Continued)

## 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.

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EXPOSURE CONTROLS/PERSONAL PROTECTION  
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## Engineering Controls

Use only with adequate ventilation.

## Personal Protective Equipment

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.

Applicators and other handlers must wear:

- 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.
- Shoes plus socks.

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

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours.

## Exposure Guidelines

## Applicable Exposure Limits

NICOSULFURON  
PEL (OSHA) : None Established  
TLV (ACGIH) : None Established  
AEL \* (DuPont) : 5 mg/m<sup>3</sup>, 8 & 12 Hr. TWA, respirable dust  
dust

RIMSULFURON  
PEL (OSHA) : None Established  
TLV (ACGIH) : None Established  
AEL \* (DuPont) : 5 mg/m<sup>3</sup>, 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.

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PHYSICAL AND CHEMICAL PROPERTIES  
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## Physical Data

Form : Granular.  
Color : Off-White.  
Odor : (slight).  
Density : 35-40 lb/cu ft  
pH : 6  
Specific Gravity : 0.63

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STABILITY AND REACTIVITY  
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## Chemical Stability

Stable at normal temperatures and storage conditions.

## Incompatibility with Other Materials

None reasonably foreseeable.

## Polymerization

Polymerization will not occur.

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TOXICOLOGICAL INFORMATION  
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## # Animal Data

Based on a formulation containing  
37.5% Nicosulfuron/37.5% Rimsulfuron:

Oral LD50: > 5000 mg/kg in rats  
(Very low toxicity)  
Dermal LD50: > 2000 mg/kg in rabbits  
(Slightly to Moderately toxic)  
Inhalation 4-hour LC50: > 5.6 mg/L in rats

## (TOXICOLOGICAL INFORMATION - Continued)

(Very low toxicity)

Based on the results of studies on a formulation containing 37.5% Nicosulfuron/37.5% Rimsulfuron, Steadfast is considered to be a slight skin irritant, and a moderate eye irritant, but is not a skin sensitizer in animal tests.

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.

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.

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ECOLOGICAL INFORMATION  
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## Ecotoxicological Information

## AQUATIC TOXICITY:

## NICOSULFURON

96 hour LC50 - Bluegill sunfish: &gt; 1000 mg/L.

96 hour LC50 - Rainbow trout: &gt; 1000 mg/L.

48 hour EC50 - Daphnia magna: &gt; 1000 mg/L.

## (ECOLOGICAL INFORMATION - Continued)

## AVIAN TOXICITY:

## NICOSULFURON

Acute Oral LD50 - Bobwhite Quail: &gt; 2250 mg/kg.

Acute Dietary LC50 - Bobwhite Quail: &gt; 5620 ppm.

Acute Dietary LC50 - Mallard Duck: &gt; 5620 ppm.

## AQUATIC TOXICITY:

## RIMSULFURON

96 hour LC50 - Rainbow trout: &gt; 390 mg/L.

96 hour LC50 - Bluegill sunfish: &gt; 390 mg/L.

96 hour LC50 - Carp: &gt; 900 mg/L.

## AVIAN TOXICITY:

## RIMSULFURON

Acute Oral LD50 - Bobwhite Quail: &gt; 2250 mg/kg.

Acute Oral LD50 - Mallard Duck: &gt; 2000 mg/kg.

Acute Dietary LC50 - Bobwhite Quail: &gt; 5620 ppm.

Acute Dietary LC50 - Mallard Duck: &gt; 5620 ppm ppm

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DISPOSAL CONSIDERATIONS  
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## 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 facility.

## ENVIRONMENTAL HAZARDS

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment rinsewater. Do not apply where/when conditions could favor runoff. Do not apply if a severe storm is expected within 24 hours.

## 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 out of smoke.

For Fiber Sacks: 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 facility, in accordance with Federal, state and local regulations.

For Fiber Drums with Liners: Completely empty liner by

## (DISPOSAL CONSIDERATIONS - Continued)

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.

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TRANSPORTATION INFORMATION  
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## Shipping Information

DOT: Not Regulated by 49 CFR (DOT)

IMO/IMDG: Not Regulated by IMO/IMDG

IATA: Not regulated by IATA

Additional Information: Although material is not regulated by the DOT/IMO/IATA, it may be transported as a class 9 (UN 3077) under special provision SP146 (DOT), 909 (IMDG) or A97 (IATA). The following description would apply using any one of the aforementioned special provisions:

UN 3077, Environmentally hazardous substances, solid, n.o.s., (Rimsulfuron, Nicosulfuron), 9, PG III

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REGULATORY INFORMATION  
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## U.S. Federal Regulations

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : Yes  
Chronic : No  
Fire : No

## (REGULATORY INFORMATION - Continued)

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. 352-608

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OTHER INFORMATION  
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## NFPA, NPCA-HMIS

NFPA Rating  
Health : 1  
Flammability : 0  
Reactivity : 0

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

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

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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.

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