

**DuPont™ Resolve® Q Herbicide**

Version 2.0

Revision Date 09/18/2015

Ref. 130000043418

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

**SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : DuPont™ Resolve® Q Herbicide  
Tradename/Synonym : DPX-QFU30 WG  
Rimsulfuron: N-((4,6-dimethoxypyrimidin-2-yl)aminocarbonyl)-3-(ethylsulfonyl)-2-pyridinesulfonamide  
Thifensulfuron-methyl: Methyl 3-[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)amino]carbonyl]amino]sulfonyl]-2-thiophenecarboxylate

Product Use : Herbicide

Restrictions on use :  
Do not use product for anything outside of the above specified uses

Manufacturer/Supplier : DuPont  
4417 Lancaster Pike  
Wilmington, DE 19805, USA

Product Information : 1-800-441-7515 (outside the U.S. 1-302-774-1000)  
Medical Emergency : 1-800-441-3637 (outside the U.S. 1-302-774-1139)  
Transport Emergency : CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

**SECTION 2. HAZARDS IDENTIFICATION**

Not classified as a hazardous substance or mixture according to the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard 2012.

**Other hazards**

No applicable data available.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

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Component	CAS-No.	Concentration
Rimsulfuron	122931-48-0	18.4 %
Thifensulfuron methyl	79277-27-3	4 %
Ethyl 5,5-diphenyl-2-isoxazoline-3-carboxylate		9.2 %
Disodium phosphate		5 - 10 %
Lignin Sulfonate Salt		1 - 5 %
Sodium carbonate	497-19-8	1 - 5 %
Other Ingredients		<=61.4 %

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

**SECTION 4. FIRST AID MEASURES**

- General advice : Have the product container or label with you when calling a poison control center or doctor, or going for treatment.  
For medical emergencies involving this product, call toll free 1-800-441-3637.  
See Label for Additional Precautions and Directions for Use.
- Inhalation : Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for treatment advice.

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- Skin contact : Take off all contaminated clothing immediately. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
- Eye contact : 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.
- Ingestion : Call a poison control center or doctor for treatment advice. Have person sip a glass of water if able to swallow. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Do not give anything by mouth to an unconscious person.
- Most important symptoms/effects, acute and delayed : No applicable data available.
- Protection of first-aiders : No applicable data available.
- Notes to physician : No applicable data available.

**SECTION 5. FIREFIGHTING MEASURES**

- Suitable extinguishing media : Water spray, Foam, Dry chemical, Carbon dioxide (CO<sub>2</sub>)
- Unsuitable extinguishing media : High volume water jet, (contamination risk)
- Specific hazards : No applicable data available.
- Special protective equipment for firefighters : Wear full protective clothing and self-contained breathing apparatus.
- Further information : Control Runoff. Evacuate personnel and keep upwind of fire. (on small fires) If area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the area contaminated. Cool containers/tanks with water spray.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

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

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- Safeguards (Personnel) : Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus. Use personal protective equipment.
- Environmental precautions : Prevent material from entering sewers, waterways, or low areas.
- Spill Cleanup : Sweep up and shovel into suitable containers for disposal.
- Accidental Release Measures : Never return spills in original containers for re-use. Dispose of in accordance with local regulations.

**SECTION 7. HANDLING AND STORAGE**

- Handling (Personnel) : Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing/PPE immediately if material gets inside. Wash thoroughly and put on clean clothing.
- Handling (Physical Aspects) : Keep away from heat and sources of ignition.
- Dust explosion class : No applicable data available.
- Storage : Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Store in original container. Store in a cool, dry place. Keep out of the reach of children.
- Storage period : No applicable data available.
- Storage temperature : No applicable data available.

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

- Engineering controls : Ensure adequate ventilation.
- Personal protective equipment
- Skin and body protection : 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), all greater than or equal to 14 mils  
Shoes plus socks  
PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has


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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), all greater than or equal to 14 mils

Shoes plus socks

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

**Exposure Guidelines  
Exposure Limit Values**
**Rimsulfuron**

AEL *	(DUPONT)	5 mg/m3	8 & 12 hr. TWA Total dust.
AEL *	(DUPONT)	2.5 mg/m3	8 & 12 hr. TWA Respirable dust.

**Thifensulfuron methyl**

AEL *	(DUPONT)	5 mg/m3	8 & 12 hr. TWA Total dust.
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**Ethyl 5,5-diphenyl-2-isoxazoline-3-carboxylate**

No applicable data available.

**Disodium phosphate**

No applicable data available.

**Lignin Sulfonate Salt**

No applicable data available.

**Sodium carbonate**

AEL *	(DUPONT)	5 mg/m3	8 & 12 hr. TWA Total dust.
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\* 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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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

## Appearance

Physical state : solid  
Form : solid, granular  
Color : light tan

Odor : slight

Odor threshold : No applicable data available.

pH : 6.2 - 7.2

Melting point/range : No applicable data available.

Boiling point/boiling range : No applicable data available.

Flash point : No applicable data available.

Evaporation rate : No applicable data available.

Flammability (solid, gas) : No applicable data available.

Upper explosion limit : No applicable data available.

Lower explosion limit : No applicable data available.

Vapour Pressure : No applicable data available.

Vapour density : No applicable data available.

Specific gravity (Relative density) : No applicable data available.

Water solubility : No applicable data available.

Solubility(ies) : No applicable data available.

Partition coefficient: n-octanol/water : No applicable data available.

Auto-ignition temperature : No applicable data available.


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Decomposition temperature : No applicable data available.

Viscosity, kinematic : No applicable data available.

Viscosity, dynamic : No applicable data available.

**SECTION 10. STABILITY AND REACTIVITY**

Reactivity : No applicable data available.

Chemical stability : Stable under normal conditions.  
Stable at normal temperatures and storage conditions.

Possibility of hazardous reactions : Polymerization will not occur.

Conditions to avoid : None reasonably foreseeable.

Incompatible materials : No materials to be especially mentioned.

Hazardous decomposition products : No applicable data available.

**SECTION 11. TOXICOLOGICAL INFORMATION**

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Inhalation 4 h Acute toxicity estimate : &gt; 5.0 mg/l , Rat

Dermal Acute toxicity estimate : &gt; 5,000 mg/kg , Rat

Oral Acute toxicity estimate : &gt; 5,000 mg/kg , Rat

Skin irritation : No skin irritation, Rabbit

Eye irritation : No eye irritation, Rabbit  
Minimal effects that do not meet the threshold for classification.

Sensitisation : Did not cause sensitisation on laboratory animals., Guinea pig

Did not cause sensitisation on laboratory animals., Mouse

Further information : Information given is based on data on the components.

Rimsulfuron

Repeated dose toxicity :


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The following effects occurred at levels of exposure that significantly exceed those expected under labeled usage conditions.

Oral

Rat

-

altered blood chemistry, Liver effects, Organ weight changes

- Carcinogenicity : Did not show carcinogenic effects in animal experiments.
- Mutagenicity : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.  
Did not show mutagenic effects in animal experiments.
- Reproductive toxicity : Animal testing did not show any effects on fertility.
- Teratogenicity : Evidence suggests the substance is not a developmental toxin in animals.

Thifensulfuron methyl

Repeated dose toxicity

- : The following effects occurred at levels of exposure that significantly exceed those expected under labeled usage conditions.

Oral - feed

multiple species

-

Reduced body weight gain

- Carcinogenicity : Animal testing did not show any carcinogenic effects.
- Mutagenicity : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.  
Animal testing did not show any mutagenic effects.
- Reproductive toxicity : No toxicity to reproduction  
Animal testing showed no reproductive toxicity.
- Teratogenicity : Did not show teratogenic effects in animal experiments.  
Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.

Ethyl 5,5-diphenyl-2-isoxazoline-3-carboxylate

Repeated dose toxicity : Ingestion




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Mouse  
 - 90 d  
 NOAEL: 19.8 mg/kg  
 LOAEL: 191 mg/kg Method: OPPTS 870.3100  
 No toxicological effects warranting significant target organ toxicity classification were seen below the recommended guidance values for classification.

- Carcinogenicity** : Not classifiable as a human carcinogen.  
 Animal testing did not show any carcinogenic effects.
- Mutagenicity** : Animal testing did not show any mutagenic effects.  
 Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
- Reproductive toxicity** : No toxicity to reproduction  
 Animal testing showed no reproductive toxicity.
- Teratogenicity** : Evidence suggests the substance is not a developmental toxin in animals.

## Disodium phosphate

- Repeated dose toxicity** : Ingestion  
 Dog  
 - 90 d  
 NOAEL: 322.88 mg/kg  
 No toxicologically significant effects were found., Information given is based on data obtained from similar substances.
- Mutagenicity** : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.  
 Evidence suggests this substance does not cause genetic damage in animals.  
 Information given is based on data obtained from similar substances.
- Reproductive toxicity** : No toxicity to reproduction  
 Animal testing showed no reproductive toxicity.  
 Information given is based on data obtained from similar substances.
- Teratogenicity** : Animal testing showed no developmental toxicity.  
 Information given is based on data obtained from similar substances.

## Lignin Sulfonate Salt

- Repeated dose toxicity** : Ingestion


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Rat  
 - 16 Weeks  
 NOAEL: 2,830 mg/kg  
 No toxicologically significant effects were found., Information given is based on data obtained from similar substances.

Mutagenicity : Animal testing did not show any mutagenic effects.  
 Did not cause genetic damage in cultured bacterial cells.  
 Information given is based on data obtained from similar substances.

## Sodium carbonate

Repeated dose toxicity : Inhalation  
 Rat  
 -  
 Respiratory tract irritation

Mutagenicity : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.  
 Evidence suggests this substance does not cause genetic damage in animals.

Reproductive toxicity : Animal testing showed no reproductive toxicity.

Teratogenicity : Animal testing showed no developmental toxicity.

## Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

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

**SECTION 12. ECOLOGICAL INFORMATION**

## Aquatic Toxicity

## Rimsulfuron

96 h LC50 : Oncorhynchus mykiss (rainbow trout) > 390 mg/l

96 h LC50 : Lepomis macrochirus (Bluegill sunfish) > 390 mg/l


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120 h EbC50 : Selenastrum capricornutum (green algae) 1.6 mg/l  
 48 h EC50 : Daphnia magna (Water flea) > 360 mg/l  
 90 d : NOEC Oncorhynchus mykiss (rainbow trout) 110 mg/l  
 21 d : NOEC Daphnia magna (Water flea) 0.82 mg/l

## Thifensulfuron methyl

96 h LC50 : Oncorhynchus mykiss (rainbow trout) > 100 mg/l  
 14 d EC50 : Lemna minor (duckweed) 0.0013 mg/l  
 48 h EC50 : Daphnia magna (Water flea) 470 mg/l  
 28 d : NOEC Americamysis bahia (mysid shrimp) 7.93 mg/l

## Ethyl 5,5-diphenyl-2-isoxazoline-3-carboxylate

96 h LC50 : Lepomis macrochirus (Bluegill sunfish) 0.22 mg/l  
 96 h EC50 : Pseudokirchneriella subcapitata (green algae) > 1.26 mg/l  
 96 h NOEC : Pseudokirchneriella subcapitata (green algae) 1.26 mg/l

## Disodium phosphate

96 h LC50 : Oncorhynchus mykiss (rainbow trout) > 100 mg/l OECD Test  
 Guideline 203  
 Information given is based on data obtained from similar substances.  
 72 h ErC50 : Desmodesmus subspicatus (green algae) > 100 mg/l OECD Test  
 Guideline 201  
 Information given is based on data obtained from similar substances.  
 72 h NOEC : Desmodesmus subspicatus (green algae) > 100 mg/l OECD Test  
 Guideline 201  
 Information given is based on data obtained from similar substances.  
 48 h EC50 : Daphnia magna (Water flea) > 100 mg/l OECD Test Guideline 202  
 Information given is based on data obtained from similar substances.

## Sodium carbonate

96 h LC50 : Lepomis macrochirus (Bluegill sunfish) 300 mg/l


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48 h LC50 : Ceriodaphnia dubia (water flea) 200 - 227 mg/l  
 4 d : EC50 Daphnia magna (Water flea) 228 - 297 mg/l

## Environmental Fate

## Rimsulfuron

Biodegradability : According to the results of tests of biodegradability this product is not readily biodegradable.

Bioaccumulation : Does not bioaccumulate.

## Sodium carbonate

Biodegradability : The methods for determining biodegradability are not applicable to inorganic substances.

Bioaccumulation : Does not bioaccumulate.

Additional ecological information : Environmental Hazards: Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate. Do not apply where/when conditions favour runoff. See product label for additional application instructions relating to environmental precautions.

**SECTION 13. DISPOSAL CONSIDERATIONS**

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

Waste disposal methods - Container : Container Refilling and Disposal:  
 Refer to the product label for instructions.  
 Do not transport if this container is damaged or leaking.

In the event of a major spill, fire or other emergency, call 1-800-441-3637 day or night.

Contaminated packaging : No applicable data available.


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**SECTION 14. TRANSPORT INFORMATION**

IATA_C	UN number	: 3077
	Proper shipping name	: Environmentally hazardous substance, solid, n.o.s. (Isoxadifen-ethyl)
	Class	: 9
	Packing group	: III
	Labelling No.	: 9MI
IMDG	UN number	: 3077
	Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Isoxadifen-ethyl)
	Class	: 9
	Packing group	: III
	Labelling No.	: 9
	Marine pollutant	: yes (Isoxadifen-ethyl)

Not regulated by DOT/49 CFR unless shipped in bulk package or by water.

Marine Pollutants assigned UN number 3077 and 3082 in single or combination packaging containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass per single or inner packaging of 5 KG or less for solids may be transported as non-dangerous goods as provided in section 2.10.2.7 of IMDG code, IATA special provision A197, and ADR/RID special provision 375.

**SECTION 15. REGULATORY INFORMATION**

Other regulations : This Safety Data Sheet is for a pesticide product registered by the US Environmental Protection Agency (USEPA) and is therefore also subject to certain labeling requirements under US pesticide law (FIFRA). These requirements differ from the classification criteria and hazard information required by OSHA for safety data sheets, and for workplace labels of non-pesticide chemicals. The following is the mandatory hazard information required by USEPA on the pesticide label:

**CAUTION!**

Causes moderate eye irritation. Prolonged or frequently repeated skin contact

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may cause allergic reactions in some individuals. Avoid contact with eyes or clothing.

SARA 313 Regulated Chemical(s) : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

PA Right to Know Regulated Chemical(s) : Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Kaolin, Sucrose, Disodium hydrogen orthophosphate

EPA Reg. No. : 352-777  
In the United States this product is regulated by the US Environmental Protection Agency (EPA) under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read and follow all label directions. This product is excluded from listing requirements under EPA/TSCA.

**SECTION 16. OTHER INFORMATION**

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® Registered trademark of E.I. du Pont de Nemours and Company

Revision Date : 09/18/2015

Contact person : DuPont Crop Protection, Wilmington, DE, 19898, Phone: 1-888-638-7668

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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