

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Product form : Mixture  
Product name : INFERNO™ DUO  
Other means of identification : PMRA Reg. No. 30663

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Herbicide

#### 1.3. Details of the supplier of the safety data sheet

Arysta LifeScience North America LLC  
15401 Weston Parkway, Suite 150  
Cary, NC 27513 – USA

Arysta LifeScience  
400 Michener Road, Unit 2  
Guelph, Ontario  
N1K 1E4

#### 1.4. Emergency telephone number

Emergency number : Exposure Calls (PROSAR): +1-866-303-6952 or +1-651-603-3432 (international)  
Spill Calls (CHEMTREC) (Contract # CCN1779): +1-800-424-9300 or +1-703-527-3887 (international)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### GHS classification

Eye Irrit. 2A H319  
STOT RE 2 H373

Full text of H-phrases: see section 16

#### 2.2. Label elements

##### GHS labelling

Hazard pictograms (GHS) :



GHS07

GHS08

Signal word (GHS) :

Warning

Hazard statements (GHS) :

H319 - Causes serious eye irritation  
H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary statements (GHS) :

P260 - Do not breathe dust  
P264 - Wash hands thoroughly after handling  
P280 - Wear eye protection, protective gloves, protective clothing  
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P314 - Get medical advice/attention if you feel unwell  
P337+P313 - If eye irritation persists: Get medical advice/attention  
P501 - Dispose of contents/container to an authorised waste collection point

#### 2.3. Other hazards

No additional information available

#### 2.4. Unknown acute toxicity (GHS US)

0.47 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Oral)  
1.13 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal)  
0.66 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))

### SECTION 3: Composition/information on ingredients

#### 3.1. Substance

Not applicable

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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
according to Canada Hazardous Product Regulation (HPR)

### 3.2. Mixture

Name	Product identifier	% (w/w)	GHS classification
Flucarbazono sodium (Main constituent)	(CAS No) 181274-17-9	>= 47.7	Not classified
Tribenuron methyl (Main constituent)	(CAS No) 101200-48-0	23.9	Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Lignosulfonic acid, sodium salt	(CAS No) 8061-51-6	10.22	STOT RE 2, H373
5-methoxy-4-methyl-2,4-dihydro-3H-1,2,4-triazol-3-one	(CAS No) 135302-13-5	>= 0.18	Skin Sens. 1, H317

Full text of H-phrases: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.
- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
- First-aid measures after skin contact : Wash with plenty of soap and water.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- First-aid measures after ingestion : Do NOT induce vomiting. Rinse mouth. Sip water. Get immediate medical advice/attention.

### 4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : May cause damage to organs through prolonged or repeated exposure.
- Symptoms/injuries after skin contact : Repeated or prolonged contact may cause slight irritation to the skin.
- Symptoms/injuries after eye contact : Causes serious eye irritation.

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

- Suitable extinguishing media : Carbon dioxide. Dry chemical. Foam. Water fog.
- Unsuitable extinguishing media : None known.

### 5.2. Special hazards arising from the substance or mixture

- Fire hazard : Burning produces irritating, toxic and noxious fumes.
- Reactivity : No dangerous reactions known.

### 5.3. Advice for firefighters

- Firefighting instructions : Do not allow run-off from fire fighting to enter drains or water courses. Exercise caution when fighting any chemical fire.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Use self-contained breathing apparatus.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Avoid creating or spreading dust. Avoid contact with skin and eyes.

#### 6.1.1. For non-emergency personnel

- Protective equipment : Chemical goggles or safety glasses. Wear suitable gloves.
- Emergency procedures : Evacuate unnecessary personnel.

#### 6.1.2. For emergency responders

- Protective equipment : Chemical goggles or safety glasses. Wear suitable gloves.
- Emergency procedures : Ventilate area. Stop leak if safe to do so.

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Do not allow large quantities, as are, to spread into the environment. Do not discharge into drains or rivers.

### 6.3. Methods and material for containment and cleaning up

- For containment : Do not allow minor leaks or spills to accumulate on walking surfaces.

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Methods for cleaning up : Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Following recovery, flush area with water. Clean surface thoroughly to remove residual contamination.

### 6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Avoid breathing dust. Avoid contact with skin, eyes and clothing.  
Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Do not store near food, foodstuffs, drugs, or potable water supplies. Store locked up.  
Incompatible products : Strong acids. Strong bases.  
Prohibitions on mixed storage : Keep away from incompatible materials.  
Storage area : Store in dry, cool, well-ventilated area. Keep out of reach of children. Keep out of direct sunlight.

### 7.3. Specific end use(s)

Herbicide

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

INFERNO™ DUO		
ACGIH	Not applicable	
OSHA	Not applicable	
Tribenuron methyl (101200-48-0)		
ACGIH	Not applicable	
OSHA	Not applicable	
Flucarbazone sodium (181274-17-9)		
ACGIH	Not applicable	
OSHA	Not applicable	
5-methoxy-4-methyl-2,4-dihydro-3H-1,2,4-triazol-3-one (135302-13-5)		
ACGIH	Not applicable	
OSHA	Not applicable	
Lignosulfonic acid, sodium salt (8061-51-6)		
ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (Inhalable particulates not otherwise specified); 3 mg/m <sup>3</sup> (Respirable particulates not otherwise specified)
OSHA	Not applicable	

### 8.2. Exposure controls

Appropriate engineering controls : Avoid dispersal of dust in the air (ie, clearing dust surfaces with compressed air). Use only outdoors or in a well-ventilated area.  
Personal protective equipment : Avoid all unnecessary exposure.  
Hand protection : Dust impervious gloves.  
Eye protection : Chemical goggles or safety glasses.  
Skin and body protection : Long sleeved protective clothing. Foot protection.  
Respiratory protection : In case of inadequate ventilation wear respiratory protection. Use air-purifying respirator equipped with particulate filtering cartridges.  
Environmental exposure controls : Prevent leakage or spillage.  
Consumer exposure controls : Keep out of reach of children.  
Other information : Do not eat, drink or smoke when using this product.

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### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Granules
Colour	: Beige tan
Odour	: Mild characteristic
Odour threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosive limits	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Vapour pressure	: No data available
Relative density	: No data available
Relative vapour density at 20 °C	: No data available
Solubility	: Water: Solubility in water of component(s) of the mixture : • Flucarbazono sodium: 44 g/l
Log Pow	: No data available
Log Kow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

#### 9.2. Other information

No additional information available

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

No dangerous reactions known.

#### 10.2. Chemical stability

Stable under normal conditions.

#### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

#### 10.4. Conditions to avoid

Heat. Avoid dust formation.

#### 10.5. Incompatible materials

Strong acids. Strong bases.

#### 10.6. Hazardous decomposition products

Carbon oxides (CO, CO<sub>2</sub>). Nitrogen oxides. Burning produces irritating, toxic and noxious fumes.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Likely routes of exposure	: Inhalation; Skin and eye contact
Acute toxicity	: Not classified

#### INFERNO™ DUO

LD50 oral rat	5000 mg/kg
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LD50 dermal rat	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 2.02 mg/l/4h

### Tribenuron methyl (101200-48-0)

LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg

### Flucarbazone sodium (181274-17-9)

LD50 oral rat	> 5000 mg/kg
LD50 dermal rat	> 5000 mg/kg
LC50 inhalation rat (mg/l)	> 5.13 mg/l/4h

### 5-methoxy-4-methyl-2,4-dihydro-3H-1,2,4-triazol-3-one (135302-13-5)

LD50 oral rat	> 2500 mg/kg
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### Lignosulfonic acid, sodium salt (8061-51-6)

LD50 oral rat	> 12000 mg/kg
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Skin corrosion/irritation	: Not classified (Slightly irritating to skin)
Serious eye damage/irritation	: Causes serious eye irritation. (Irritating to rabbits on ocular application)
Respiratory or skin sensitisation	: Not classified. (No sensitizing reaction was observed for guinea pigs)
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Not classified
Symptoms/injuries after skin contact	: Repeated or prolonged contact may cause slight irritation to the skin.
Symptoms/injuries after eye contact	: Causes serious eye irritation.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - water : Very toxic to aquatic life with long lasting effects.

#### Tribenuron methyl (101200-48-0)

LC50 fish 1	> 1000 mg/l 96 h Bluegill, Rainbow trout
EC50 Daphnia 1	720 mg/l 48 h

#### Flucarbazone sodium (181274-17-9)

LC50 fish 1	> 96.7 mg/l 96 h oncorhynchus mykiss
LC50 other aquatic organisms 1	6.4 mg/l 96 h green algae
EC50 Daphnia 1	38.8 mg/l 48 h
LC50 fish 2	> 99.3 mg/l 96 h bluehill

#### 5-methoxy-4-methyl-2,4-dihydro-3H-1,2,4-triazol-3-one (135302-13-5)

LC50 fish 1	> 100 mg/l
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#### Lignosulfonic acid, sodium salt (8061-51-6)

LC50 fish 1	361 ppm 96h Pimephales promelas
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### 12.2. Persistence and degradability

#### INFERNO™ DUO

Persistence and degradability	May cause long-term adverse effects in the environment.
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#### Lignosulfonic acid, sodium salt (8061-51-6)

Persistence and degradability	Biodegrades slowly.
Biochemical oxygen demand (BOD)	0.021 g O <sub>2</sub> /g substance (5 day/day); 0.043 g O <sub>2</sub> /g (30 day/days)

### 12.3. Bioaccumulative potential

#### Flucarbazone sodium (181274-17-9)

Bioconcentration factor (BCF REACH)	3 (estimated)
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### 12.4. Mobility in soil

#### Flucarbazone sodium (181274-17-9)

Mobility in soil	mobile in soil; Koc = 36 (estimated)
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### 12.5. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste treatment methods	: Do not dispose in household garbage.
Sewage disposal recommendations	: Do not dispose of waste into sewer.
Waste disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Additional information	: Recycle product or dispose safely.
Ecology - waste materials	: Dispose of container in a licensed facility.

## SECTION 14: Transport information

### In accordance with DOT and TDG

Not considered a dangerous good for transport regulations

### Additional information

Other information : No supplementary information available.

### ADR

Transport document description	: UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Tribenuron methyl), 9, III, (E)
Packing group (ADR)	: III
Class (ADR)	: 9 - Miscellaneous dangerous substances and articles
Hazard identification number (Kemler No.)	: 90
Classification code (ADR)	: M7
Danger labels (ADR)	: 9 - Miscellaneous dangerous substances and articles



Orange plates



Tunnel restriction code (ADR)	: E
Limited quantities (ADR)	: 5kg
Excepted quantities (ADR)	: E1

### Transport by sea

UN-No. (IMDG)	: 3077
Proper Shipping Name (IMDG)	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Tribenuron methyl)
Class (IMDG)	: 9 - Miscellaneous dangerous substances and articles
Packing group (IMDG)	: III - substances presenting low danger
Marine Pollutant	: Yes



### Air transport

UN-No.(IATA)	: 3077
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Proper Shipping Name (IATA)	: Environmentally hazardous substance, solid, n.o.s. (Tribenuron methyl)
Class (IATA)	: 9 - Miscellaneous Dangerous Goods
Packing group (IATA)	: III - Minor Danger
Marine Pollutant	: Yes



### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

##### Tribenuron methyl (101200-48-0)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory  
Listed on United States SARA Section 313

##### Flucarbazone sodium (181274-17-9)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

##### 5-methoxy-4-methyl-2,4-dihydro-3H-1,2,4-triazol-3-one (135302-13-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

##### Lignosulfonic acid, sodium salt (8061-51-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

EPA TSCA Regulatory Flag

XU - XU - indicates a substance exempt from reporting under the Inventory Update Reporting Rule, i.e., Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(C)).

#### 15.2. International regulations

##### CANADA

##### Tribenuron methyl (101200-48-0)

Not listed on the Canadian DSL (Domestic Substances List) inventory.  
Not listed on the Canadian Non-Domestic Substances List (NDSL).

##### Flucarbazone sodium (181274-17-9)

Not listed on the Canadian DSL (Domestic Substances List) inventory.  
Not listed on the Canadian Non-Domestic Substances List (NDSL).

##### 5-methoxy-4-methyl-2,4-dihydro-3H-1,2,4-triazol-3-one (135302-13-5)

Listed on the Canadian NDSL (Non-Domestic Substances List)

##### Lignosulfonic acid, sodium salt (8061-51-6)

Listed on the Canadian DSL (Domestic Substances List) inventory.

##### EU-Regulations

##### Tribenuron methyl (101200-48-0)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

##### Flucarbazone sodium (181274-17-9)

Not listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

##### 5-methoxy-4-methyl-2,4-dihydro-3H-1,2,4-triazol-3-one (135302-13-5)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

##### Lignosulfonic acid, sodium salt (8061-51-6)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Eye Irrit. 2 H319

STOT RE 2 H373

Aquatic Acute 1 H400

Aquatic Chronic 1 H410

Full text of H-phrases: see section 16

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### National regulations

No additional information available

### 15.3. US State regulations

#### Tribenuron methyl (101200-48-0)

U.S. - New Jersey - Right to Know Hazardous Substance List

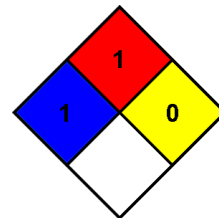
## SECTION 16: Other information

- Indication of changes : Original Document.
- Data sources : European Chemicals Agency (ECHA) Registered Substances list. Accessed at <http://echa.europa.eu/>.  
Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition.  
OSHA 29CFR 1910.1200 Hazard Communication Standard.  
TSCA Chemical Substance Inventory. Accessed at <http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html>.
- Abbreviations and acronyms : ACGIH (American Conference of Government Industrial Hygienists).  
ATE: Acute Toxicity Estimate.  
CAS (Chemical Abstracts Service) number.  
CLP: Classification, Labelling, Packaging.  
EC50: Environmental Concentration associated with a response by 50% of the test population.  
GHS: Globally Harmonized System (of Classification and Labeling of Chemicals.)  
LD50: Lethal Dose for 50% of the test population.  
OSHA: Occupational Safety & Health Administration.  
STEL: Short Term Exposure Limits.  
TSCA: Toxic Substances Control Act.  
TWA: Time Weight Average.
- Other information : None.

### Full text of H-phrases:

Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Skin Sens. 1	Sensitisation — Skin, category 1
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

- NFPA health hazard : 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.
- NFPA fire hazard : 1 - Must be preheated before ignition can occur.
- NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



SDS US (GHS HazCom 2012)

**SDS Prepared by:** The Redstone Group, LLC.  
6077 Frantz Rd.  
Suite 206  
Dublin, Ohio, USA 43016  
614.923.7472  
[www.redstonegrp.com](http://www.redstonegrp.com)

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*