

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

1.1. Product identifier

Trade name : Bellum
EPA Reg. Number : 83100-41-83979

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

1.2.1. Relevant identified uses

Industrial/Professional use spec : Industrial
For professional use only
Use of the substance/mixture : Agriculture Herbicide

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Rotam North America, Inc.
4900 Koger Blvd., Suite 140
Greensboro, NC 27407
Phone: 1-(866) 927-6826 (toll free); 1-(336) 346-8802
msds@rotam.com

1.4. Emergency telephone number

Emergency number : 1-800-858-7378 (NPIC)
1-800-222-1222 (Poison Control Center)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification

<u>Hazard Class</u>	<u>Category</u>	<u>Hazard Statement</u>
Aquatic Toxicity Acute	1	H400
Aquatic Toxicity Chronic	1	H410


If applicable, full text of H-phrases appear in "Label elements" below

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

GHS Labeling Elements

Hazard pictograms (CLP) : 
GHS09
Signal word (CLP) : Warning

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Hazard statements (CLP) : H410 - Very toxic to aquatic life with long lasting effects
Precautionary statements (CLP) : P273 - Avoid release to the environment
P391 - Collect spillage
P501 - Dispose of contents/container to regulation

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixture

Name	Product identifier	%
Mesotrione	(CAS No) 104206-82-8	40
Other Ingredients	NA	60

SECTION 4: First aid measures

4.1. Description of first aid measures

IF INHALED : 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.

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 irritation develops or persists.

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 poison control center or doctor for treatment advice if irritation develops or persists.

IF SWALLOWED : Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to by a poison control center or doctor. Do not give anything to an unconscious person

First-aid measures – general : Have the product container or label with you when calling a poison control center or doctor, or going for treatment. See Label for Additional Precautions and Directions for Use.

Notes to Physician : There is no specific antidote. Treat symptomatically

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

Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media : Do not use a heavy water stream.

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5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Avoid (reject) fire-fighting water to enter environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Absorb spills on spill pillows or other suitable absorbing material (e.g. sand, soil or diatomaceous earth) and place in a sealed container for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store in original container. Store in a cool, dry place. Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Keep out of the reach of children.
- Incompatible products : Strong bases. Strong acids.
- Incompatible materials : Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

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8.2. Exposure controls

Train employees in safe use of the product. Follow all label instructions. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry.

Applicators and other handlers must wear:

Long sleeved shirt and long pants
Chemical-resistant gloves, (such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinylchloride (PVC) or viton), all greater than or equal to 14 mils. Shoes plus socks.

PPE required for early entry to treated areas that involves contact with anything that has been treated, such as plants, soil, or water, is:

Coveralls. Chemical-resistant gloves, ((such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinylchloride (PVC) or viton), all greater than or equal to 14 mils. Shoes plus socks

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Viscous liquid at 25.0°C
Color	: Off-white to beige
Odor	: Odorless
Odor threshold	: No data available
pH	: 4.28 at 25.0°C (1% aqueous dilution) (CIPAC (J) MT 75.3)
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: Mesotrione: 162.2~163.8 °C (EEC A.1, OECD 102)
Freezing point	: No data available
Boiling point	: No exothermic effect (other than melting point) in the range 60-360°C (SANCO/1416/2001)°C
Flash point	: No flash point till 99.7°C (CIPAC (F) MT 12)
Self ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapor pressure	: Mesotrione: 1.03×10^{-6} Pa at 20.0°C (EEC A.4)
Relative Vapor density at 20 °C	: No data available
Relative density	: 1.200 at 20°C (density: 1.198 g/ml)
Solubility	: Suspension in water
Log Pow	: Mesotrione: Distilled water (pH 6.97): log Pow 0.13 at 20°C (EEC A.8)
Viscosity, kinematic	: No data available
Viscosity, dynamic	: Non-newtonian fluid (374.0 mPa·s, 60 RPM shear rate at 20°C; 326.0 mPa·s, 60 RPM shear rate at 40°C) (OECD 114)

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Explosive properties : Product is not explosive. (EEC A.14)
Oxidizing properties : Mesotrione: Oxidizing solids Not classified.
Explosive limits : No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

Fumes. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Bellum	
LD ₅₀ oral rat	5000 mg/kg (cut-off value) (OECD-423)
LD ₅₀ dermal rat	> 2000 mg/kg (OECD-402)
LC ₅₀ inhalation rat (mg/l)	> 2.30 mg/l air/4h (maximum attainable concentration) (OECD-403)

Skin corrosion/irritation : Not irritant to skin (OECD-404)
Serious eye damage/irritation : Not irritant to eyes (OECD-405)
Respiratory or skin sensitization : Not a skin sensitizer (OECD-406)
Germ cell mutagenicity : Not classified
Based on available data, the classification criteria are not met
Carcinogenicity : Not classified
Based on available data, the classification criteria are not met
Reproductive toxicity : Not classified
Based on available data, the classification criteria are not met
Specific target organ toxicity (single exposure) : Not classified
Based on available data, the classification criteria are not met

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Specific target organ toxicity (repeated exposure)	: Not classified Based on available data, the classification criteria are not met
Aspiration hazard	: Not classified Based on available data, the classification criteria are not met
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

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

Bellum	
LC ₅₀ (96 h) Fish 1	> 100 mg/l for freshwater fish (<i>Poecilia reticulata</i>)
EC ₅₀ (48 h) Daphnia 2	> 100 mg a.i./L
LC ₅₀ (72 h) (algae)	> 100 mg/l for <i>Pseudokirchneriella subcapitata</i>
LD ₅₀ (48 h) (Honeybee)	Oral and Contact: > 100 µg a.i./bee (<i>Apis mellifera</i>)

12.2. Persistence and degradability

Mesotrione (104206-82-8)	
Persistence and degradability	May cause long-term adverse effects in the environment.

12.3. Bioaccumulative potential

Mesotrione (104206-82-8)	
Log Pow	0.13
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

: Avoid release to the environment

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal : Open dumping is prohibited. Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

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Container disposal : Completely empty container into application equipment, then dispose of empty container in a sanitary landfill, by incineration or by other procedures approved by state/provincial and local authorities. If burned, stay out of smoke. Consult label for additional container disposal information.

SECTION 14: Transport information

Not Regulated by US DOT or Canadian TDG for ground shipment

Ground transport

Not Regulated by US DOT

Not Regulated by Canadian TDG

Transport by sea (IMDG)

UN 3082; ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Mesotrione); 9; III; Marine Pollutant

Air transport (IATA)

UN 3082; ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Mesotrione); 9; III

Additional Air, Sea and International Transportation Information

UN-No. : 3082
Proper Shipping Name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Mesotrione)
Transport document description : UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Mesotrione), 9, III
Class (UN) : 9
Hazard labels (UN) : 9



Packing group (UN) : III
Marine Pollutant (Y/N) : Y
Dangerous for the environment :



SECTION 15: Regulatory information

FIFRA Information:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Signal word : **CAUTION**
Hazard statements : Harmful if swallowed or absorbed through skin.
Precautionary statements : Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum,

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using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

SARA 313 Regulated Chemical(s): None

Title III hazard classification:

Acute Health Hazard: Yes

Chronic Health Hazard: No

Fire: No

Reactivity/Physical hazard: No

Pressure: No

Canadian Regulatory Information:

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR. WHMIS Classification: D2B – Toxic



SECTION 16: Other information

NFPA:

Health: 1; Flammability: 0; Reactivity: 0; Specific:

HMIS:

Health: 1; Flammability: 0; Physical Hazard: 0; PPE: E

US-GHS

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