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

<table>
<thead>
<tr>
<th>Hazard Class</th>
<th>Category</th>
<th>Hazard Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Toxicity Acute</td>
<td>1</td>
<td>H400</td>
</tr>
<tr>
<td>Aquatic Toxicity Chronic</td>
<td>1</td>
<td>H410</td>
</tr>
</tbody>
</table>

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
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

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mesotrione</td>
<td>(CAS No) 104206-82-8</td>
<td>40</td>
</tr>
<tr>
<td>Other Ingredients</td>
<td>NA</td>
<td>60</td>
</tr>
</tbody>
</table>

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

Unsuitable extinguishing media
Do not use a heavy water stream.
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
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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Viscous liquid at 25.0°C</td>
</tr>
<tr>
<td>Color</td>
<td>Off-white to beige</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>4.28 at 25.0°C (1% aqueous dilution) (CIPAC (J) MT 75.3)</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>Mesotrione: 162.2~163.8 °C (EEC A.1, OECD 102)</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No exothermic effect (other than melting point) in the range 60-360°C (SANCO/1416/2001)°C</td>
</tr>
<tr>
<td>Flash point</td>
<td>No flash point till 99.7°C (CIPAC (F) MT 12)</td>
</tr>
<tr>
<td>Self ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Mesotrione: 1.03 x 10⁻⁶ Pa at 20.0°C (EEC A.4)</td>
</tr>
<tr>
<td>Relative Vapor density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.200 at 20°C (density: 1.198 g/ml)</td>
</tr>
<tr>
<td>Solubility</td>
<td>Suspension in water</td>
</tr>
<tr>
<td>Log Pow</td>
<td>Mesotrione: Distilled water (pH 6.97): log Pow 0.13 at 20°C (EEC A.8)</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>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)</td>
</tr>
</tbody>
</table>
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

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Bellum

<table>
<thead>
<tr>
<th>Acute toxicity</th>
<th>Not classified</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Bellum</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LD₅₀ oral rat</td>
<td>5000 mg/kg (cut-off value) (OECD-423)</td>
</tr>
<tr>
<td>LD₅₀ dermal rat</td>
<td>&gt; 2000 mg/kg (OECD-402)</td>
</tr>
<tr>
<td>LC₅₀ inhalation rat (mg/l)</td>
<td>&gt; 2.30 mg/l air/4h (maximum attainable concentration) (OECD-403)</td>
</tr>
</tbody>
</table>

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
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.

<table>
<thead>
<tr>
<th><strong>Bellum</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>LC₅₀ (96 h) Fish 1</td>
</tr>
<tr>
<td>EC₅₀ (48 h) Daphnia 2</td>
</tr>
<tr>
<td>LC₅₀ (72 h) (algae)</td>
</tr>
<tr>
<td>LD₅₀ (48 h) (Honeybee)</td>
</tr>
</tbody>
</table>

**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)**

<table>
<thead>
<tr>
<th>Log Pow</th>
<th>0.13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioaccumulative potential</td>
<td>Not established.</td>
</tr>
</tbody>
</table>

**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.
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,
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**

**Disclaimer:** The information provided by Rotam North America, Inc. contained herein is given in good faith and correct to the best of our knowledge. However, the information given is designed only as guidance for safe handling, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification.

SDS US