



# MacDermid Enthone

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Commission Regulation (EU) 2020/878 - Sweden

## SAFETY DATA SHEET

EBONOL C-115

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

#### 1.1 Product identifier

**Product name** : EBONOL C-115  
**Product code** : 201686

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

##### Identified uses

Surface Treatment.  
Industrial applications.

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

**e-mail address of person responsible for this SDS** : sdsuk@macdermid.com; regulatory.de@macdermid.com

**Supplier** : MacDermid Performance Solutions Scandinavia AB  
P.O. Box 83  
Mässingsgatan 1  
SE-601 02 Norrköping  
Sweden

**Information contact** : Tel +46 11367470  
Macdermid.Scandinavia@macdermid.com

#### 1.4 Emergency telephone number

##### National advisory body/Poison Centre

**Telephone number** : 112 – begär Giftinformation

##### Supplier

**Telephone number** : Carechem24: (+46) 8 566 42573; (+44) 1235 239 670 (across Europe)  
**Hours of operation** : 24/7

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

**Product definition** : Mixture

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

Eye Dam. 1, H318  
Aquatic Chronic 2, H411

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

## SECTION 2: Hazards identification

### 2.2 Label elements

#### Hazard pictograms



#### Signal word

: Danger

#### Hazard statements

: H318 - Causes serious eye damage.  
H411 - Toxic to aquatic life with long lasting effects.

#### Precautionary statements

##### Prevention

: P280 - Wear eye or face protection.  
P273 - Avoid release to the environment.

##### Response

: P391 - Collect spillage.  
P305 + P351 + P338, P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Immediately call a POISON CENTER or doctor.

##### Storage

:

##### Disposal

: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

#### Hazardous ingredients

: Zinc sulphate  
copper sulphate

#### Supplemental label elements

: Not applicable.

#### Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

: Not applicable.

#### Special packaging requirements

### 2.3 Other hazards

#### Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

: This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

#### Other hazards which do not result in classification

: None known.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

: Mixture

| Product/ingredient name | Identifiers   | %  | Classification  | Specific Conc. Limits, M-factors and ATEs   | Type    |
|-------------------------|---|----|---|---|---------|
| phosphoric acid         | REACH #: 01-2119485924-24<br>EC: 231-633-2<br>CAS: 7664-38-2<br>Index: 015-011-00-6 | ≤5 | Met. Corr. 1, H290<br>Skin Corr. 1B, H314<br>Eye Dam. 1, H318 | Met. Corr. 1, H290: C ≥ 20%<br>Skin Corr. 1B, H314: C ≥ 25%<br>Skin Irrit. 2, H315: 10% ≤ C < 25%<br>Eye Dam. 1, H318: C ≥ 25%<br>Eye Irrit. 2, H319: 10% ≤ C < 25% | [1] [2] |
| zinc sulphate           | REACH #:  | ≤3 | Acute Tox. 4, H302  | ATE [Oral] = 500  | [1]     |

## SECTION 3: Composition/information on ingredients

|                             |  |      |  |   |         |
|-----------------------------|--|------|--|---|---------|
| selenious acid              | 01-2119474684-27<br>EC: 231-793-3<br>CAS: 7733-02-0<br>Index: 030-006-00-9             |      | Eye Dam. 1, H318<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410   | mg/kg<br>M [Acute] = 1<br>M [Chronic] = 1   |         |
|                             | EC: 231-974-7<br>CAS: 7783-00-8<br>Index: 034-002-00-8                                 | ≤3   | Acute Tox. 3, H301<br>Acute Tox. 3, H331<br>STOT RE 2, H373<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410  | ATE [Oral] = 100 mg/kg<br>ATE [Inhalation (dusts and mists)] = 0.5 mg/l<br>M [Acute] = 1<br>M [Chronic] = 1 | [1] [2] |
| hexaammonium heptamolybdate | REACH #:<br>01-2119498057-28<br>EC: 234-722-4<br>CAS: 12027-67-7                       | ≤3   | Not classified.  | -   | [2]     |
| copper sulphate             | REACH #:<br>01-2119520566-40<br>EC: 231-847-6<br>CAS: 7758-98-7<br>Index: 029-004-00-0 | ≤1.8 | Acute Tox. 4, H302<br>Skin Irrit. 2, H315<br>Eye Dam. 1, H318<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410<br><b>See Section 16 for the full text of the H statements declared above.</b> | ATE [Oral] = 307.5 mg/kg<br>M [Acute] = 10<br>M [Chronic] = 1   | [1] [2] |

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

### Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

Occupational exposure limits, if available, are listed in Section 8.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

#### Eye contact

- : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

#### Inhalation

- : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

#### Skin contact

- : Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

## SECTION 4: First aid measures

- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

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

#### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
blistering may occur
- Ingestion** : Adverse symptoms may include the following:  
stomach pains

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

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

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

- Hazards from the substance or mixture** : In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous combustion products** : Decomposition products may include the following materials:  
nitrogen oxides  
sulfur oxides  
phosphorus oxides  
metal oxide/oxides

### 5.3 Advice for firefighters

## SECTION 5: Firefighting measures

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
- Additional information** : Not considered to be a product presenting a risk of explosion.

## SECTION 6: Accidental release measures

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

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

### 6.2 Environmental precautions

- : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

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

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

### 6.4 Reference to other sections

- : See Section 1 for emergency contact information.  
See Section 8 for information on appropriate personal protective equipment.  
See Section 13 for additional waste treatment information.

## SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 7.1 Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

SECTION 7: Handling and storage

**Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store between the following temperatures: 5 to 40°C (41 to 104°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.  
Note: The temperature range listed here will maintain the quality of the material during its specified shelf-life. This temperature range restriction is not required to maintain safe storage conditions.

7.3 Specific end use(s)

**Recommendations** : No specific measures identified.  
**Industrial sector specific solutions** : No specific measures identified.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

8.1 Control parameters

Occupational exposure limits

| Product/ingredient name     | Exposure limit values   |
|-----------------------------|---|
| phosphoric acid             | Work environment authority Regulation 2018:1 (Sweden, 9/2021).<br>TWA: 1 mg/m³ 8 hours.<br>STEL: 2 mg/m³ 15 minutes.  |
| selenious acid              | Work environment authority Regulation 2018:1 (Sweden, 9/2021). [selenium and inorganic compounds other than hydrogen selenide (as Se)]<br>TWA: 0.1 mg/m³, (as Se) 8 hours. Form: Total dust |
| hexaammonium heptamolybdate | Work environment authority Regulation 2018:1 (Sweden, 9/2021). [molybdenum, highly soluble compounds total dust, (as Mo)]<br>TWA: 5 mg/m³, (as Mo) 8 hours. Form: Total dust                |
| copper sulphate             | Work environment authority Regulation 2018:1 (Sweden, 9/2021). [copper and inorganic compounds respirable fraction, (as Cu)]<br>TWA: 0.01 mg/m³, (as Cu) 8 hours. Form: respirable fraction |

**Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.



## SECTION 8: Exposure controls/personal protection

### DNELs/DMELs

| Product/ingredient name | Type | Exposure              | Value                  | Population                     | Effects  |
|-------------------------|------|-----------------------|------------------------|--------------------------------|----------|
| phosphoric acid         | DNEL | Long term Inhalation  | 10.7 mg/m <sup>3</sup> | Workers                        | Systemic |
|                         | DNEL | Long term Inhalation  | 1 mg/m <sup>3</sup>    | Workers                        | Local    |
|                         | DNEL | Short term Inhalation | 1 mg/m <sup>3</sup>    | Workers                        | Local    |
|                         | DNEL | Long term Inhalation  | 4.57 mg/m <sup>3</sup> | General population [Consumers] | Systemic |
|                         | DNEL | Long term Inhalation  | 0.36 mg/m <sup>3</sup> | General population [Consumers] | Local    |
|                         | DNEL | Long term Oral        | 0.1 mg/m <sup>3</sup>  | General population [Consumers] | Systemic |
|                         | DNEL | Long term Oral        | 0.1 mg/kg bw/day       | General population             | Systemic |
|                         | DNEL | Long term Inhalation  | 0.36 mg/m <sup>3</sup> | General population             | Local    |
|                         | DNEL | Long term Inhalation  | 1 mg/m <sup>3</sup>    | Workers                        | Local    |
|                         | DNEL | Short term Inhalation | 2 mg/m <sup>3</sup>    | Workers                        | Local    |
|                         | DNEL | Long term Inhalation  | 4.57 mg/m <sup>3</sup> | General population             | Systemic |
|                         | DNEL | Long term Inhalation  | 10.7 mg/m <sup>3</sup> | Workers                        | Systemic |
|                         | DNEL | Long term Oral        | 0.83 mg/kg bw/day      | General population             | Systemic |
|                         | DNEL | Long term Inhalation  | 1 mg/m <sup>3</sup>    | Workers                        | Systemic |
| zinc sulphate           | DNEL | Long term Inhalation  | 1.25 mg/m <sup>3</sup> | General population             | Systemic |
|                         | DNEL | Long term Dermal      | 8.3 mg/kg bw/day       | General population             | Systemic |
|                         | DNEL | Long term Dermal      | 8.3 mg/kg bw/day       | Workers                        | Systemic |
|                         | DNEL | Long term Inhalation  | 1 mg/kg bw/day         | Workers                        | Systemic |
| copper sulphate         | DNEL | Long term Dermal      | 137 mg/kg bw/day       | Workers                        | Systemic |
|                         | DNEL | Long term Oral        | 0.041 mg/kg bw/day     | General population             | Systemic |
|                         | DNEL | Short term Oral       | 0.082 mg/kg bw/day     | General population             | Systemic |
|                         | DNEL | Long term Inhalation  | 1 mg/m <sup>3</sup>    | Workers                        | Local    |
|                         | DNEL | Long term Inhalation  | 1 mg/m <sup>3</sup>    | Workers                        | Systemic |
|                         | DNEL | Long term Dermal      | 137 mg/kg bw/day       | Workers                        | Systemic |
|                         | DNEL | Long term Dermal      | 137 mg/kg bw/day       | Workers                        | Systemic |

### PNECs

## SECTION 8: Exposure controls/personal protection

| Product/ingredient name  | Compartment Detail     | Value           | Method Detail            |
|--|------------------------|-----------------|--------------------------|
| Zinc sulphate<br><br><br><br><br><br><br><br><br><br>copper sulphate | Fresh water            | 20.6 µg/l       | Sensitivity Distribution |
|  | Marine water           | 6.1 µg/l        | Sensitivity Distribution |
|  | Sewage Treatment Plant | 100 µg/l        | Assessment Factors       |
|  | Fresh water sediment   | 117.8 mg/kg dwt | Sensitivity Distribution |
|  | Marine water sediment  | 56.5 mg/kg dwt  | Equilibrium Partitioning |
|  | Soil                   | 35.6 mg/kg dwt  | Sensitivity Distribution |
|  | Fresh water            | 7.8 µg/l        | Sensitivity Distribution |
|  | Marine water           | 5.2 µg/l        | Assessment Factors       |
|  | Sewage Treatment Plant | 230 µg/l        | Sensitivity Distribution |
|  | Fresh water sediment   | 87 mg/kg dwt    | -                        |
|  | Marine water sediment  | 676 mg/kg dwt   | Equilibrium Partitioning |
|  | Soil                   | 65 mg/kg dwt    | -                        |

### 8.2 Exposure controls

#### Appropriate engineering controls

- ☑ If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

#### Individual protection measures

##### Hygiene measures

- Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

##### Eye/face protection

- Use eye protection according to EN 166. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

#### Skin protection

##### Hand protection

- Wear suitable gloves tested to EN374. Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. 4 - 8 hours (breakthrough time): fluorinated rubber, butyl rubber, thickness: 0.5 mm.

##### Body protection

- Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: chemical-resistant protective suit (EN 13034).

##### Other skin protection

- Wear protective shoes. (EN 13832-3) Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

##### Respiratory protection

- Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: Half-face mask (EN 140) FFP2.



## SECTION 8: Exposure controls/personal protection

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

## SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

### 9.1 Information on basic physical and chemical properties

#### Appearance

**Physical state** : Liquid.  
**Colour** : Blue.  
**Odour** : Characteristic.  
**Odour threshold** : There are no data available on the mixture itself.  
**Melting point/freezing point** : ☒ 0°C  
**Initial boiling point and boiling range** : ☒ 100 to 110°C (212 to 230°F)  
**Flammability** : ☒ Non-flammable in the presence of the following materials or conditions: open flames, sparks and static discharge.  
**Lower and upper explosion limit** : There are no data available on the mixture itself.  
**Flash point** : ☒ Closed cup: Not applicable. [No flammable ingredients present.]  
**Auto-ignition temperature** : ☒ Not applicable.  
**Decomposition temperature** : There are no data available on the mixture itself.  
**pH** : ☒ 3  
**Viscosity** : There are no data available on the mixture itself.  
**Solubility(ies)** :

| Media      | Result         |
|------------|----------------|
| cold water | Easily soluble |

**Solubility in water** : There are no data available on the mixture itself.

**Miscible with water** : ☒ Yes.

**Partition coefficient: n-octanol/ water** : Not applicable.

**Vapour pressure** :

| Ingredient name                           | Vapour Pressure at 20°C |     |        | Vapour pressure at 50°C |     |        |
|---|-------------------------|-----|--------|-------------------------|-----|--------|
|   | mm Hg                   | kPa | Method | mm Hg                   | kPa | Method |
| <input checked="" type="checkbox"/> water | 23.8                    | 3.2 |        |                         |     |        |

**Evaporation rate** : There are no data available on the mixture itself.

**Relative density** : There are no data available on the mixture itself.

**Density** : 1.098 g/cm<sup>3</sup> [20°C (68°F)]

**Vapour density** : There are no data available on the mixture itself.

**Explosive properties** : ☒ Not considered to be a product presenting a risk of explosion.

**Oxidising properties** : ☒ Not applicable No oxidising ingredients present.




#### Particle characteristics

**Median particle size** : Not applicable.

### 9.2 Other information

**SAPT** : Not relevant/applicable due to nature of the product.

## SECTION 10: Stability and reactivity

- 10.1 Reactivity** :  Reactive or incompatible with the following materials: alkalis.
- 10.2 Chemical stability** :  The product is stable.  
No specific stability hazards associated with this product.
- 10.3 Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- 10.4 Conditions to avoid** : No specific data.
- 10.5 Incompatible materials** :  No specific data.
- 10.6 Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Acute toxicity

| Product/ingredient name | Result      | Species | Dose      | Exposure |
|-------------------------|-------------|---------|-----------|----------|
| phosphoric acid         | LD50 Oral   | Rat     | 1.25 g/kg | -        |
| selenious acid          | LD50 Dermal | Rabbit  | 4 mg/kg   | -        |
| copper sulphate         | LD50 Oral   | Rat     | 960 mg/kg | -        |

**Conclusion/Summary** : Not tested

#### Acute toxicity estimates

| Product/ingredient name | Oral (mg/kg) | Dermal (mg/kg) | Inhalation (gases) (ppm) | Inhalation (vapours) (mg/l) | Inhalation (dusts and mists) (mg/l) |
|-------------------------|--------------|----------------|--------------------------|-----------------------------|-------------------------------------|
| EBONOL C-115            | 3054.9       | N/A            | N/A                      | N/A                         | 21.1                                |
| zinc sulphate           | 500          | N/A            | N/A                      | N/A                         | N/A                                 |
| selenious acid          | 100          | N/A            | N/A                      | N/A                         | 0.5                                 |
| copper sulphate         | 307.5        | N/A            | N/A                      | N/A                         | N/A                                 |

#### Irritation/Corrosion

| Product/ingredient name | Result                   | Species | Score | Exposure | Observation |
|-------------------------|--------------------------|---------|-------|----------|-------------|
| zinc sulphate           | Eyes - Moderate irritant | Rabbit  | -     | 420 ug   | -           |

#### Conclusion/Summary

- Skin** : Not tested
- Eyes** : Not tested
- Respiratory** : Not tested

#### Sensitisation

#### Conclusion/Summary

- Skin** : Not tested
- Respiratory** : Not tested

#### Mutagenicity

**Conclusion/Summary** : Not tested

#### Carcinogenicity

**Conclusion/Summary** : Not tested

#### Reproductive toxicity

**Conclusion/Summary** : Not tested

## SECTION 11: Toxicological information


### Teratogenicity

**Conclusion/Summary** : Not tested

### Specific target organ toxicity (single exposure)

Not available.

### Specific target organ toxicity (repeated exposure)



| Product/ingredient name  | Category   | Route of exposure | Target organs |
|--|------------|-------------------|---------------|
|  selenious acid | Category 2 | -                 | -             |

### Aspiration hazard

Not available.

**Information on likely routes of exposure** : Not tested

### Potential acute health effects

**Eye contact** : Causes serious eye damage.  
**Inhalation** :  No known significant effects or critical hazards.  
**Skin contact** :  No known significant effects or critical hazards.  
**Ingestion** : No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness  
**Inhalation** : No specific data.  
**Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
blistering may occur  
**Ingestion** : Adverse symptoms may include the following:  
stomach pains

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

#### Short term exposure

**Potential immediate effects** : Not available.  
**Potential delayed effects** : Not available.

#### Long term exposure

**Potential immediate effects** : Not available.  
**Potential delayed effects** : Not available.

### Potential chronic health effects

Not available.

**Conclusion/Summary** : Not available.  
**General** : No known significant effects or critical hazards.  
**Carcinogenicity** : No known significant effects or critical hazards.  
**Mutagenicity** : No known significant effects or critical hazards.  
**Reproductive toxicity** : No known significant effects or critical hazards.

## SECTION 11: Toxicological information

### 11.2 Information on other hazards

#### 11.2.1 Endocrine disrupting properties

Not available.

#### 11.2.2 Other information

No known significant effects or critical hazards.

## SECTION 12: Ecological information

### 12.1 Toxicity

| Product/ingredient name | Result                               | Species  | Exposure |
|-------------------------|--------------------------------------|--|----------|
| phosphoric acid         | Acute EC50 105 ppm Fresh water       | Daphnia - Daphnia magna                          | 48 hours |
| zinc sulphate           | Acute LC50 60 ppm Fresh water        | Fish - Lepomis macrochirus                       | 96 hours |
|                         | Acute EC50 724.4 µg/l Fresh water    | Algae - Stichococcus bacillaris                  | 72 hours |
|                         | Acute EC50 202 µg/l Marine water     | Algae - Ulva fasciata - Zoea                     | 96 hours |
|                         | Acute LC50 4 µg/l Fresh water        | Crustaceans - Mesocyclops hyalinus - Adult       | 48 hours |
|                         | Acute LC50 21.8 µg/l Fresh water     | Daphnia - Daphnia magna - Neonate                | 48 hours |
|                         | Acute LC50 2.36 µg/l Fresh water     | Fish - Cirrhinus mrigala                         | 96 hours |
|                         | Chronic NOEC 142.5 µg/l Marine water | Algae - Ulva fasciata - Zoea                     | 96 hours |
|                         | Chronic NOEC 0.2 mg/l Marine water   | Crustaceans - Litopenaeus vannamei - Post-larvae | 21 days  |
|                         | Chronic NOEC 1.7 mg/l Fresh water    | Daphnia - Daphnia magna - Neonate                | 21 days  |
| selenious acid          | Chronic NOEC 26 µg/l Fresh water     | Fish - Jordanella floridae                       | 100 days |
|                         | Acute EC50 6.89 ppm Marine water     | Algae - Skeletonema costatum                     | 72 hours |
|                         | Acute EC50 7.93 ppm Marine water     | Algae - Skeletonema costatum                     | 96 hours |
|                         | Acute LC50 1200 µg/l Fresh water     | Daphnia - Daphnia magna - Neonate                | 48 hours |
|                         | Acute LC50 599 ppb Marine water      | Fish - Melanogrammus aeglefinus - Larvae         | 96 hours |
|                         | Chronic NOEC 83 µg/l Fresh water     | Fish - Pimephales promelas - Egg                 | 28 days  |
| copper sulphate         | Acute EC50 1.5 µg/l Fresh water      | Algae - Chlorella sp. - Exponential growth phase | 72 hours |
|                         | Acute EC50 0.144 mg/l Fresh water    | Aquatic plants - Lemna minor                     | 96 hours |
|                         | Acute EC50 1.6 µg/l Fresh water      | Crustaceans - Ceriodaphnia dubia - Neonate       | 48 hours |
|                         | Acute EC50 2.67 µg/l Fresh water     | Fish - Acipenser transmontanus - Larvae          | 4 days   |
|                         | Chronic NOEC 0.6 µg/l Fresh water    | Algae - Chlorella sp. - Exponential growth phase | 72 hours |
|                         | Chronic NOEC 0.0018 mg/l Fresh water | Aquatic plants - Lemna minor                     | 96 hours |
|                         | Chronic NOEC 18.8 µg/l Fresh water   | Daphnia - Daphnia magna - Neonate                | 21 days  |
|                         | Chronic NOEC 0.46 µg/l Fresh water   | Fish - Acipenser transmontanus - Larvae          | 53 days  |

**Conclusion/Summary** : Ecological testing has not been conducted on this product.

### 12.2 Persistence and degradability

**Conclusion/Summary** : According to EC criteria: Not expected to be readily biodegradable

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|-------------------------|-------------------|------------|------------------|
| copper sulphate         | -                 | -          | Not readily      |

### 12.3 Bioaccumulative potential

## SECTION 12: Ecological information

| Product/ingredient name | LogP <sub>ow</sub> | BCF   | Potential |
|-------------------------|--------------------|-------|-----------|
| Zinc sulphate           | -0.07              | 60960 | high      |
| selenious acid          | -                  | 1.11  | low       |

### 12.4 Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : Not available.

Mobility : Not available.

### 12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

### 12.6 Endocrine disrupting properties

Not available.

### 12.7 Other adverse effects

No known significant effects or critical hazards.

## SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 13.1 Waste treatment methods

#### Product

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.





**Hazardous waste** : The classification of the product may meet the criteria for a hazardous waste.

#### Packaging

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

**Special precautions** : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spill material and runoff and contact with soil, waterways, drains and sewers.

## SECTION 14: Transport information

|                                 | ADR/RID   | IMDG  |  |
|---------------------------------|---|---|--|
| 14.1 UN number or ID number     | UN3082  | UN3082  |  |
| 14.2 UN proper shipping name    | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (zinc sulphate)   | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (zinc sulphate)   |  |
| 14.3 Transport hazard class(es) |   |   |  |

## SECTION 14: Transport information

|                            |      |      |  |
|----------------------------|------|------|--|
| 14.4 Packing group         | III  | III  |  |
| 14.5 Environmental hazards | Yes. | Yes. |  |

### Additional information

**ADR/RID** : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.

**Tunnel code** (-)

**IMDG** : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.

**Emergency schedules** F-A, S-F

**IMDG Code Segregation group** SGG7 - Heavy metals and their salts (including their organometallic compounds)

**14.6 Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**14.7 Maritime transport in bulk according to IMO instruments** : Not applicable - not transported in bulk

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

#### EU Regulation (EC) No. 1907/2006 (REACH)

##### Annex XIV - List of substances subject to authorisation

###### Annex XIV

None of the components are listed.

###### Substances of very high concern

None of the components are listed.

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** : Not applicable.

#### Other EU regulations

**Industrial emissions (integrated pollution prevention and control) - Air** : Not listed

**Industrial emissions (integrated pollution prevention and control) - Water** : Not listed

#### Ozone depleting substances (1005/2009/EU)

Not listed.

#### Seveso Directive - Reporting thresholds

##### Danger criteria



## SECTION 15: Regulatory information

| Category | Notification and MAPP threshold | Safety report threshold |
|----------|---------------------------------|-------------------------|
| E2       | 200 tonne                       | 500 tonne               |

### National regulations

**15.2 Chemical safety assessment** : Chemical Safety Assessments for all substances in this product are either Complete or Not applicable.

## SECTION 16: Other information

Indicates information that has changed from previously issued version.

**Abbreviations and acronyms** :

- ATE = Acute Toxicity Estimate
- CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
- DMEL = Derived Minimal Effect Level
- DNEL = Derived No Effect Level
- EUH statement = CLP-specific Hazard statement
- N/A = Not available
- PBT = Persistent, Bioaccumulative and Toxic
- PNEC = Predicted No Effect Concentration
- RRN = REACH Registration Number
- SGG = Segregation Group
- vPvB = Very Persistent and Very Bioaccumulative

### Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

| Classification                              | Justification                            |
|---|--|
| Eye Dam. 1, H318<br>Aquatic Chronic 2, H411 | Calculation method<br>Calculation method |

### Full text of abbreviated H statements

|      |  |
|------|--|
| H290 | May be corrosive to metals.  |
| H301 | Toxic if swallowed.  |
| H302 | Harmful if swallowed.  |
| H314 | Causes severe skin burns and eye damage.                           |
| H315 | Causes skin irritation.  |
| H318 | Causes serious eye damage.   |
| H331 | Toxic if inhaled.  |
| 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.              |
| H411 | Toxic to aquatic life with long lasting effects.                   |

### Full text of classifications [CLP/GHS]

|                   |   |
|-------------------|---|
| Acute Tox. 3      | ACUTE TOXICITY - Category 3                                     |
| Acute Tox. 4      | ACUTE TOXICITY - Category 4                                     |
| Aquatic Acute 1   | SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1                  |
| Aquatic Chronic 1 | LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1                 |
| Aquatic Chronic 2 | LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2                 |
| Eye Dam. 1        | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1                  |
| Met. Corr. 1      | CORROSIVE TO METALS - Category 1                                |
| Skin Corr. 1B     | SKIN CORROSION/IRRITATION - Category 1B                         |
| Skin Irrit. 2     | SKIN CORROSION/IRRITATION - Category 2                          |
| STOT RE 2         | SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2 |

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## SECTION 16: Other information

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

MacDermid Enthone SDS CLP Europe