SECTION 1: Identification

1.1. Product identifier
Product form: Mixture
Product name: Ironsave-S

1.2. Recommended use and restrictions on use
Corrosion inhibitor to be used with sulphuric acid based pickling.

1.3. Supplier
SOPRIN S.r.l.
Via dell’Industria 106
31052 Maserada Sul Piave (TV)
- Italy
T (+39) 0422 521025 - F (+39) 0422 521060
soprin@soprin.it (Alessandro Padovan)

1.4. Emergency telephone number
Emergency number: CHEMTREC 800 424 9300

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
Classification (GHS-US/CAN)
Eye Irrit. 2  H319

Full text of classification categories and H statements : see section 16

2.2. Label elements
GHS-US/CAN labeling
Hazard pictograms:

Signal word: Warning
Hazard statements: H319 - Causes serious eye irritation
Precautionary statements:
P264 - Wash thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337+P313 - If eye irritation persists: Get medical advice/attention

2.3. Other hazards
No additional information available

2.4. Unknown acute toxicity (GHS-US/CAN)
No data available

SECTION 3: Composition/Information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-CA)</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-Pentanediol, 2-methyl-</td>
<td>(CAS No) 107-41-5</td>
<td>2 - 2.5</td>
<td>Skin Irrit. 2, H315 Eye Irrit. 2A, H319</td>
<td>Skin Irrit. 2, H315 Eye Irrit. 2A, H319</td>
</tr>
<tr>
<td>Compound, prop-2-yn-1-ol with methyloxirane</td>
<td>(CAS No) 38172-91-7</td>
<td>&lt; 1</td>
<td>Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318</td>
<td>Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318</td>
</tr>
</tbody>
</table>

Full text of hazard classes and H statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures
First-aid measures after inhalation: Get medical advice/attention immediately. Remove victim to fresh air, away from the accident scene. If the subject stops breathing, administer artificial respiration. Take suitable precautions for rescue workers.

First-aid measures after skin contact: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention.

First-aid measures after eye contact: Remove contact lenses, if present. Wash immediately with plenty of water for at least 30-60 minutes, opening the eyelids fully. Get medical advice/attention.

First-aid measures after ingestion: Have the subject drink as much water as possible. Get medical advice/attention. Do not induce vomiting unless explicitly authorised by a doctor.
4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation: Vapour inhalation may moderately irritate the upper respiratory tract.
Symptoms/injuries after skin contact: Contact with skin may cause slight irritation.
Symptoms/injuries after eye contact: May cause stinging eyes. Symptoms may include: rubescence, edema, pain and lachrymation.
Symptoms/injuries after ingestion: Ingestion may cause health problems, including stomach pain and sting, nausea and sickness.

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: Carbon dioxide, foam, powder and water spray.
Unsuitable extinguishing media: None.

5.2. Special hazards arising from the substance or mixture

Fire hazard: None.
Explosion hazard: None known.

5.3. Advice for firefighters

Firefighting instructions: Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.
Protection during firefighting: Firefighters should wear full protective gear.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment: Stop the flow of material, if this is without risk.
Methods for cleaning up: Collect the leaked product into a suitable container. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material. Make sure the leakage site is well aired. Check incompatibility for container material in section 7. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling: Keep away from heat, sparks and naked flames; do not smoke or use matches or lighters. Without adequate ventilation, vapours may accumulate at ground level and, if ignited, catch fire even at a distance, with the danger of backfire. Avoid bunching of electrostatic charges. In order to avoid the risk of fires and explosions, never use compressed air when handling. Open containers with caution as they may be pressurised. Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in a well ventilated place, keep far away from sources of heat, naked flames and sparks and other sources of ignition. Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Keep containers away from any incompatible materials, see section 10 for details.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>2,4-Pentanediol, 2-methyl- (107-41-5)</th>
<th>USA - ACGIH</th>
<th>ACGIH TWA (ppm)</th>
<th>25 ppm (vapor fraction)</th>
</tr>
</thead>
</table>
8.2. Exposure controls

Appropriate engineering controls: Local exhaust and general ventilation must be adequate to meet exposure standards.

Hand protection: Use impervious gloves such as neoprene, nitrile, or rubber for hand protection.

Eye protection: Wear airtight protective goggles

Skin and body protection: Wear suitable protective clothing.

Respiratory protection: If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid

Color: Colorless

Odor: No data available

Odor threshold: No data available

pH: 5.5

Melting point: No data available

Freezing point: < 0 °C

Boiling point: 100 °C

Flash point: No data available

Relative evaporation rate (butyl acetate=1): No data available

Flammability (solid, gas): No data available

Explosion limits: No data available

Explosive properties: No data available

Oxidizing properties: No data available

Vapor pressure: No data available

Relative density: No data available

Relative vapor density at 20 °C: No data available

Specific gravity / density: 1000 kg/m³
Ironsave
Safety Data Sheet

Solubility: Soluble
Log Pow: 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 additional information available

10.2. Chemical stability
The product is stable at normal handling and storage conditions.

10.3. Possibility of hazardous reactions
Will not occur.

10.4. Conditions to avoid
Avoid exposure to sources of heat and naked flames. Avoid moisture.

10.5. Incompatible materials
Strong acids and strong oxidizers.

10.6. Hazardous decomposition products
No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity (oral): Not classified
Acute toxicity (dermal): Not classified
Acute toxicity (inhalation): Not classified

2,4-Pentanediol, 2-methyl- (107-41-5)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>3700 mg/kg</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
<td>&gt; 310 mg/m³ (Exposure time: 1 h)</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>pH: 5.5</td>
<td></td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>pH: 5.5</td>
<td></td>
</tr>
<tr>
<td>Respiratory or skin sensitization</td>
<td>Not classified</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Specific target organ toxicity – single exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>Specific target organ toxicity – repeated exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

SECTION 12: Ecological information

12.1. Toxicity
Aquatic acute: Not classified
Aquatic chronic: Not classified

2,4-Pentanediol, 2-methyl- (107-41-5)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>10500 - 11000 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])</td>
</tr>
<tr>
<td>LC50 fish 2</td>
<td>10000 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>2700 - 3700 mg/l (Exposure time: 48 h - Species: Daphnia magna)</td>
</tr>
<tr>
<td>Log Pow</td>
<td>&lt; 0.14</td>
</tr>
</tbody>
</table>
12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Compound</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-Pentanediol, 2-methyl- (107-41-5)</td>
<td>&lt; 0.14</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

<table>
<thead>
<tr>
<th>Compound</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-Pentanediol, 2-methyl- (107-41-5)</td>
<td>&lt; 0.14</td>
</tr>
</tbody>
</table>

12.5. Other adverse effects

<table>
<thead>
<tr>
<th>Compound</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations: Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: Transport information

14.1. Basic shipping description

In accordance with TDG

TDG
Not regulated for transport

14.2. Transport information/DOT

DOT
Not regulated for transport

14.3. Air and sea transport

IMDG
Not regulated for transport

IATA
Not regulated for transport

SECTION 15: Regulatory information

15.1. Canada National regulations

<table>
<thead>
<tr>
<th>Compound</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-Pentanediol, 2-methyl- (107-41-5)</td>
</tr>
</tbody>
</table>

Listed on the Canadian DSL (Domestic Substances List)

<table>
<thead>
<tr>
<th>Compound</th>
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<tbody>
<tr>
<td>Compound, prop-2-yn-1-ol with methyloxirane (38172-91-7)</td>
</tr>
</tbody>
</table>

Listed on the Canadian DSL (Domestic Substances List)

15.2. US Federal regulations

<table>
<thead>
<tr>
<th>Compound</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-Pentanediol, 2-methyl- (107-41-5)</td>
</tr>
</tbody>
</table>

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

15.3. US State regulations

<table>
<thead>
<tr>
<th>Compound</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-Pentanediol, 2-methyl- (107-41-5)</td>
</tr>
</tbody>
</table>

U.S. - Massachusetts - Right To Know List
U.S. - Minnesota - Hazardous Substance List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Full text of H-phrases:

<table>
<thead>
<tr>
<th>H319</th>
</tr>
</thead>
<tbody>
<tr>
<td>Causes serious eye irritation</td>
</tr>
</tbody>
</table>

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.