SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

1.1 Product Identifier

Product Name: Steel Seal (also known as Steel Seal Head Gasket Fix)

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

Identified use(s)

Repair of blown head gasket in vehicles with an enclosed cooling system.

Uses advised against: None known

1.3 Details of the supplier of the safety data sheet

Steel Seal Ltd
3B Wellington Road
Waterloo Park
Bidford On Avon
B50 4JH

Tel: +44(0)1789 330668

Email: info@steelseal.com

1.4 Emergency telephone number

Tel: USA: 855-771-1972 (US) (Mon - Fri 8am to 4pm PST)

United Kingdom: +44(0)1789 330668 (during usual office hours 8am-5:00pm)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
GHS Classification
H302: Harmful if swallowed
H373: May cause damage to organs Kidneys through prolonged or repeated exposure if swallowed.
H319: Serious eye damage/irritation Category 2
H315: Skin corrosion/irritation Category 2

Hazard summary
Alkaline. Irritating to eyes and skin

2.2 Label Elements

Signal Word: Warning

Hazard Statements
H302: Harmful if swallowed
H373: May cause damage to organs Kidneys through prolonged or repeated exposure if swallowed.
H319: Causes serious eye irritation.
H315: Causes skin irritation.

Precautionary Statements
P262: Do not get in eyes, on skin, or on clothing.
P270: Do not eat, drink or smoke when using this product.
P280: Wear protective gloves/protective clothing/eye protection/face protection. P281: Use personal protective equipment as required
P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501: Dispose of contents/container in accordance with local regulations.

2.3 Other hazards Not classified as PBT or vPvB

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS Number</th>
<th>EINECS Number</th>
<th>REACH Registration Number</th>
<th>Classification according to Regulation 1272/2008</th>
<th>Content (W/W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proprietary Ingredient*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethylene Glycol</td>
<td>107-21-1</td>
<td>203-473-3</td>
<td></td>
<td>H319: Eye Irrit. 2; H315: Skin Irrit.2; H335: STOT SE 3</td>
<td>90%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>H302: Acute Tox.4; H373 STOT RE 2</td>
<td>&lt;10%</td>
</tr>
</tbody>
</table>

* The exact identity of some of the ingredients and their concentrations are being withheld as a trade secret.

### 4. FIRST AID MEASURES

**4.1 Description of first aid measures**

**Inhalation**
Remove patient from exposure, keep warm and at rest. Obtain medical attention.

**Skin contact**
Wash affected skin with plenty of water. If symptoms develop, obtain medical attention.

**Eye contact**
Irrigate with eyewash solution or clean water, holding the eyelids apart, for at least 15 minutes. Obtain immediate medical attention.

**Ingestion**
Do not induce vomiting. Wash out mouth with water and give 200-300ml (half a pint) of water to drink. Obtain medical attention.

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

Alkaline - Irritating to eyes and skin. The toxicity of potassium silicate is dependent on the silica to alkali ratio and on the pH.

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

Obtain immediate medical attention.

### 5. FIRE FIGHTING MEASURES
5.1 Extinguishing Media

Suitable extinguishing media: Compatible with all standard firefighting techniques.

Unsuitable extinguishing media: None known

5.2 Special hazards arising from the substance or mixture

Not applicable. Aqueous solution. Non-combustible.

5.3 Advice for fire-fighters

None.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear suitable protective clothing. Wear eye/face protection

6.2 Environmental precautions

Do not allow to enter drains, sewers or watercourses. Advise Authorities if spillage has entered water course or sewer or has contaminated soil or vegetation.

6.3 Methods and material for containment and cleaning up

Caution-spillages may be slippery. Contain spillages with sand, earth or any suitable absorbent material. Transfer to container for disposal or recovery

6.4 Reference to other sections

See section 8

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with eyes, skin and clothing. Avoid generation of mist. Provide adequate ventilation. Emergency shower and eyewash should be readily available. See Also Section 8.

7.2 Conditions for safe storage, including any incompatibilities

Keep at room temperature not exceeding (50°C) Do not allow material to freeze. Provide an adequate bund wall. Unsuitable containers: Aluminium See section 10
7.3 Specific end use(s)
See Annex to the extended Safety Data Sheet

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>STD</th>
<th>TWA – 8hrs</th>
<th>STEL – 15mins</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene Glycol (CAS: 107-21-1)</td>
<td>WEL</td>
<td>10mg/m3</td>
<td>104 mg/m3</td>
<td>SK</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Wear protective equipment to comply with good occupational hygiene practice. Do not eat, drink or smoke at the work place.

Appropriate engineering controls

Engineering methods to prevent or control exposure are preferred.

Methods include process or personnel enclosure, mechanical ventilation (dilution and local exhaust), and control of process conditions.

Respiratory protection

Respiratory protection not normally required. Advice on respiratory protective equipment is given in the HSE (Health and Safety Executive) publication HS(G)53.

Eye protection

Chemical goggles (EN 166)

Skin & hand protection

Wear suitable protective clothing and gloves. Plastic or rubber gloves. For example EN374-3, level 6 breakthrough time (>480min). Wear suitable overalls. For example EN ISO 13982 (dust), EN 14605 (liquid splashes)

8.2.3 Environmental exposure controls

The primary hazard of potassium silicate is the alkalinity. Avoid release to the environment.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties
Appearance | Liquid. Almost colourless
Odour | Odourless
Odour threshold | Not applicable
pH value | Alkaline 11.2
Melting point/freezing point | Not Applicable
Boiling point/boiling range | 100°C
Flash point | Not applicable
Evaporation rate | Not applicable
Flammability (solid, gas) | Not applicable
Explosive limit ranges | Not applicable
Vapour pressure(mm Hg) | Not applicable
Vapour density (Air=1) | No data
Density | No data
Solubility (Water) | Soluble
Solubility (Other) | No data
Partition of coefficient | No data
Auto-ignition temperature | Not applicable
Decomposition temperature | Not applicable
Viscosity | Not applicable
Explosive properties | Not applicable
Oxidising properties | Not applicable

10. STABILITY AND REACTIVITY

10.1 Reactivity
See section 10.3

10.2 Chemical stability
Stable

10.3 Possibility of hazardous reactions
When arc welding vessels containing aqueous solutions of this material, take care to control any explosion risk from hydrogen evolved by electrolysis. Aqueous solutions will react with aluminium,
zinc, tin, and their alloys evolving hydrogen gas which can form an explosive mixture with air. Can react violently if in contact with acids. Can react with sugar residue to form carbon monoxide.

10.4 Conditions to avoid
See section 10.3

10.5 Incompatible materials
See section 10.3

10.6 Hazardous decomposition products
None known

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects
Acute Oral Toxicity
All symptoms of acute toxicity are due to high alkalinity. Material cause irritation. Oral LD50 (rat) >5000 mg/kg bw

Acute inhalation toxicity
Mist is irritation to the respiratory tract. All symptoms of acute toxicity are due to high alkalinity. Inhalation LC50 (rat) >2.06 g/m³.

Acute Dermal Toxicity
Skin contact- Repeated and/or prolonged skin contact may cause slight irritation. Dermal LD50 (rat) >5000mg/kg bw

Eye contact- Liquid or mist may cause discomfort and mild irritation

Skin Corrosion/Irritation
Repeated or prolonged skin contact may cause slight irritation

Serious eye damage/eye irritation
Liquid or mist may cause discomfort and mild irritation

Sensitisation
Not sensitising

Mutagenicity
No evidence of genotoxicity. In vitro/in vivo negative

Carcinogenicity
No structural alerts.
Reproductive toxicity

No evidence of reproductive toxicity or development toxicity.

STOT- single exposure

Not classified

STOT-repeated exposure

Not classified. NOAEL oral (rat) 159mg/kg bw/d

Aspiration hazard

Not classified

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Fish (Leuciscus idus) LC50 (48 hour) >146 mg/l Aquatic invertebrates: (Daphnia magna) EC50 (24 hour) >146 mg/l

12.2 Persistence and degradability

Inorganic. Soluble silicates, upon dilution, rapidly depolymerise into molecular species indistinguishable from natural dissolved silica.

12.3 Bio accumulative potential

Inorganic. The substance has no potential for bioaccumulation.

12.4 Mobility in soil

Not applicable

12.5 Results of PBT and vPvB assessment

Not classified as PBT or vPvB,

12.6 Other adverse effects

The alkalinity of this material will have a local effect on ecosystems sensitive to changes in pH.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Discharge of this product to sewage treatment works is dependent on local regulations with regard to pH controls. Dispose of this material and its containers to hazardous or special waste collection point. This material is classified as hazardous waste under EC Directive 2008/98/EC (and amendments). This material is classified as hazardous waste under the Hazardous Waste (England and Wales) Regulations SI 2005 No. 894. Disposal should be in accordance with local, state or national legislation.

14. TRANSPORT INFORMATION

14.1 UN Number
Not classified according to the United Nations ‘Recommendations on the Transport of Dangerous Goods’

14.2 Proper Shipping Name
Not applicable

14.3 Transport hazard class
Not applicable

14.4 Packing group
Not applicable

14.5 Environmental
Not classified as a Marine Pollutant

14.6 Special precautions for users
Unsuitable packaging - Aluminium

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
TSCA Inventory Status: Reported/Included.
AICS Inventory Status: Reported/Included.
DSL/NDSL Inventory Status: Reported/Included.

German Water Hazard Classification VwVwS: Product ID number 1316, WGK class 1 (low hazard to
16.  OTHER INFORMATION

Glossary

H315: Causes skin irritation.
H319: Causes serious eye irritation.
H335: May cause respiratory irritation.
STOT SE 3 : Specific target organ toxicity — single exposure Category 3

DNE: Derived No Effect Level
PNEC: Predicted No Effect Concentration
Source of key data used to compile the data sheet
Supplier information

Disclaimer

NOTICE: The information presented herein is based on data considered to be accurate as of the date of this Safety Data Sheet. However, an SDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorisation given or implied to practice any patented invention without a license. In addition, no responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the material.

Modifications from last revision

10/19/2018 - Addition of a product identifier (variant as may be known in the industry (Seal Steel Head Gasket Fix).

Section 3 Composition / Information on Ingredients. Re-addition of ingredients after re-evaluation of chemical composition and required percent limits. Revised to reflect percentage directives, including rearranging volumes in descending order.

08/05/2019 - Change of company (supplier/manufacturer) address
03/09/2019 – Addition of hazard statements and label elements (Section 2) in line with most recent supplier information and composition data including those relating to H373.

N/A

Date: 03/09/19