

PRODUCT: Steel Seal

REVISION: 5 DATED: 16/01/20

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

Weston Road

Bretforton, Evesham

Warwickshire, United Kingdom

WR11 7QA

Tel: +44(0)1789 330668

Email: info@steelseal.co.uk

1.4 Emergency telephone number

Tel: +44(0)1789 330668 (during usual office hours 8am-5:00pm). Out of hours please contact NHS 111 (England and Wales) or NHS 24 (Scotland) – dial 111, or in case of an emergency call a doctor or the emergency services immediately.

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification

H319: Eye Irrit. 2 Serious eye damage/irritation Category 2

H315: Skin Irrit.2; Skin corrosion/irritation Category 2

H302: Acute Tox.4 Acute toxicity, oral, Category 4

H373 STOT RE 2 Specific target organ toxicity, repeated exposure, 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

Regulation (EC) No. 1272/2008 (CLP)					
Ingredient	CAS Number	EINECS Number	REACH Registration Number	Classification according to Regulation 1272/2008	Content (W/W)
Silicic Acid, Sodium Salt	1344-09-8	215-687-4	01-2119448725-31-xxxx	H319: Eye Irrit. 2 H315: Skin Irrit.2; H335: STOT SE 3	10-20%
Silicic Acid, Potassium Salt	1312-76-1	215-199-1	01-2119456888-17-xxxx	H319: Eye Irrit. 2 H315: Skin Irrit.2; H335: STOT SE 3	6-10%
Ethylene Glycol	107-21-1	203-473-3	01-2119456816-28-xxxx	H302: Acute Tox.4 H373 STOT RE 2	8-12%
Sodium (trihydroxysilyl) Propylmethylphosphonate	84962-98-1	284-799-3		H319: Eye Irrit	0.3-0.8%

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

Name	STD	TWA – 8hrs		STEL – 15mins		Notes
Ethylene Glycol (CAS: 107-21-1)	WEL		10mg/m ³		104 mg/m ³	SK

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 water)

15.2 Chemical safety assessment

Information available on request

16. OTHER INFORMATION

Glossary

Full Text of Hazard Statements referred to under sections 2 and 3

H319: Eye Irrit. 2 - Serious eye damage/eye irritation, Category 2

H315: Skin Irrit.2 - Skin corrosion/irritation, Category 2

H335: STOT SE 3 - Specific target organ toxicity, single exposure; Respiratory tract irritation, Category 3

H302: Acute Tox.4 - Acute toxicity, oral, Category 4

H373 STOT RE 2 - Specific target organ toxicity, repeated exposure, Category 2

Abbreviations and Acronyms

AICS: Australian Inventory of Chemical Substances

CLP: Classification, Labelling and Packaging of Substances and Mixtures

CAS: Chemical Abstract Service (Division of the American Chemical Society)

DNEL: Derived No Effect Level

DSL/NDSL: Canada Domestic Substances List / Non-domestic Substance List

ECHA: European Chemicals Agency

EC50: Effective Concentration, 50 percent

EINECS: European List of Notified Chemical Substances

LD50: Lethal Dose, 50 percent

LC50: Lethal Concentration, 50 percent

PBT: Persistent, Bioaccumulative, Toxic

PNEC: Predicted No Effect Concentration PBT: Persistent, Bioaccumulative and Toxic

REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals

STOT SE: Single Target Organ Toxicity, Single Exposure

STOT RE: Single Target Organ Toxicity, Repeated Exposure

TSCA: The Toxic Substances Control Act (1976)

vPvB: very Persistent and very Bioaccumulative

VwVwS: Verwaltungsvorschrift wassergefährdende Stoffe (Administrative regulation on water-polluting substances). (Superseded by AwSV as of 20th June 2017).

WEL: Workplace Exposure Limits

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.

Update to section 2.2 on updating language precautions to reflect ECHA's recommendations.

08/05/2019 - Change of company 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 (GHS08: Health hazard). Addition of NHS 111 number in section 1.4 Emergency telephone number as out of hours emergency number.

16/01/2020 – Correction of glossary information section 16 and GHS classification, section 2.1

N/A

Revision No. 5

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