1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1 Product Identifier

Product Name : Steel Seal (also known as Steel Seal Head Gasket Fix)
Product Code : SS
UFI Number : T56F-A198-K00K-AVQQ

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

Product use : Additive for the repair of blown head gasket in vehicles with an enclosed cooling system.

1.3 Details of the supplier of the safety data sheet

Manufacturer (United Kingdom)
Steel Seal Ltd
Brickyard lane
Studley
Warwickshire
B80 7EE
United Kingdom

Tel. : 01789 330 668
Email (for SDSs) : info@steelseal.co.uk

EU Representative
Steel Seal Germany GmbH
Stockäckerstrasse 10
90587 Veitsbronn
Germany

Tel. : +49-9101-9018160
Email : info@steelseal.de

1.4 Emergency tel. no.: United Kingdom: +44 (0)1789 330 668 (Available 9am-4:30pm Mon-Fri). 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

According to Regulation (EC) 1272/2008: Classification, Labelling and Packaging of Substances and Mixtures (CLP):

Physical and Chemical Hazard	Not classified
Human health	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
Environment	Not classified

2.2 Label elements

Labelling according to EC Directives: 1272/2008/EC:

Signal word: Warning **Contains:** Silicic acid, sodium salt; Silicic acid, potassium salt; Ethanediol

Hazard Pictogram(s):

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

3.2 Mixtures:

Hazardous components

Regulation (EC) No. 1272/2008 (CLP)					
Ingredient	CAS Number / EINECS Number / Index Number	REACH Registration Number	Classification according to Regulation 1272/2008	SCL / M-Factor / ATE	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	107-21-1 203-473-3 603-027-00-1	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%

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

(1272/2008/EC: Classification, Labelling and Packaging of Substances and Mixtures (CLP) Regulation).

4. FIRST AID MEASURES

4.1 Description of first aid measures

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.

Inhalation: Remove patient from exposure, keep warm and at rest. 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

Hazardous combustion products: Not applicable. Aqueous solution. Non-combustible.

5.3 Advice for fire-fighters:

No further information available.

Special protective equipment for firefighters:
No further information available.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear suitable protective clothing. Wear eye/face protection. (See protective measures under point 7 and 8).

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 materials 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 References to other sections

See protective measures for handling and personal protection under sections 7 and 8. See disposal measures under section 13.

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 (50oC) Do not allow material to freeze. Provide an adequate bund wall. Unsuitable containers: Aluminium See section 10

7.3 Specific end use(s)

The identified uses for this product are detailed in Section 1.2. See Annex to the extended Safety Data Sheet if available for further information.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Occupational exposure limit values

Substance Name	Country	Limit value - Eight hours		Limit value - Short term		Notes	Source
		ppm	mg/m³	ppm	mg/m³		
Ethylene Glycol (CAS: 107-21-1)	United Kingdom		10		104		
	European Union	20	52	40(1)	104(1)	Skin (1) 15 minutes average value -Indicative Occupational Exposure Limit Value (IOELV)	2000/39/EC

8.2 Exposure controls

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

Personal protection

Eye/face 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).

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.

Hygiene measures: No further information.

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.

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

Physical state	Liquid
Colour	Green, almost transparent
Odour	Odourless
Melting point/freezing point	No data available
Boiling point/range	100°C
Flammability	No data available
Lower/Upper explosion limit	No data available
Flash point	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
pH (Conc solution)	Alkaline 11.2
Kinematic viscosity	No data available
Solubility	Soluble in water.
Partition coefficient: n-octanol/water	Not applicable for mixtures
Vapour pressure	No data available
Density and/or relative density	No data available
Particle characteristics	Not applicable

9.2 Other information:

Ethanol content %	No data available
VOC Content	No data available

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

This mixture is classified as dangerous according to 1999/45/EC. This mixture is classified as hazardous according to regulation (EC) No. 1272/2008 [CLP]. The classification was carried out according to the calculation method of the Preparations Directive (1999/45/EC).

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

Acute toxicity
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

Skin corrosion/irritation:	Repeated or prolonged skin contact may cause slight irritation.
Serious eye damage/irritation:	Liquid or mist may cause discomfort and mild irritation.
Respiratory or skin sensitisation:	Based on available data, the classification criteria are not met
Repeated dose toxicity:	Based on available data, the classification criteria are not met.
Carcinogenicity:	Based on available data, the classification criteria are not met.
Mutagenicity:	Based on available data, the classification criteria are not met.
Toxicity for reproduction:	Based on available data, the classification criteria are not met.
STOT – single exposure:	Based on available data, the classification criteria are not met.
STOT – repeated exposure:	NOAEL oral (rat) 159mg/kg bw/d.
Aspiration hazard	Based on available data, the classification criteria are not met.
11.2 Information on other hazards	No further information available.
Endocrine disrupting properties	No ingredients have been identified as having endocrine disrupting properties.

12. ECOLOGICAL INFORMATION

Ecotoxicity:
The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

12.1 Toxicity	Aquatic 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 Bioaccumulative 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 Endocrine disrupting properties	No information available.
12.7 Other adverse effects	The alkalinity of this material will have a local effect on ecosystems sensitive to changes in pH
Persistent Organic Pollutant	No information available.
Ozone Depletion Potential	Not applicable.

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

General Information: The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1 UN number	ADR/RID/ADN; IMDG; ICAO	Not applicable
14.2 UN proper shipping name	Not applicable	
14.3 Transport hazard class(es)	ADR/RID/ADN Class	Not applicable
	ADR/RID/ADN Class	Not applicable
	ADR Label No.	Not applicable
	IMDG Class	Not applicable
	ICAO Class/Division	Not applicable
	ICAO Subsidiary risk	Not applicable
	Transport labels	Not applicable
14.4 Packing Group	ADR/RID/ADN; IMDG;	Not applicable
14.5 Environment hazards	ICAO Marine Pollutant	Not applicable.
14.6 Special precautions for user	EMS	Not applicable Unsuitable packaging - Aluminium
14.7 Maritime transport in bulk according to IMO instruments		Not applicable.

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)

The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (S.I 2009 No. 716). Approved Code of Practice Classification and labelling of Substances and Preparations Dangerous for Supply Safety Data Sheets for Substances and Preparations.

EU Directives

Regulations (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 with amendments and Commission Regulation (EU) 2020/878 amending Annex II to Regulation (EC) No. 1907/2006.

15.2 Chemical Safety Assessment

Information available on request.

16. OTHER INFORMATION

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006 and Commission Regulation (EU) 2020/878 amending Annex II to Regulation (EC) No. 1907/2006.

Full text of H-statements referred to under sections 2 and 3

H302 Harmful if swallowed
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation
H373 May cause damage to organs Kidneys through prolonged or repeated exposure if swallowed.

Abbreviations and acronyms

ATE: Acute Toxicity Estimate.
CAS: Chemical Abstract Service (division of the American Chemical Society).
STOT: Single Target Organ Toxicity
SE: Single exposure
DNEL: Derived no effect level – a level above which humans should not be exposed.
PNEC: Predicted No Effect Concentration
TWA: Time-weighted average.
SCL: Specific Concentration Limit
STEL: Short-term exposure limit.
PBT: Persistent, Bioaccumulative, Toxic.
vPvB: very Persistent and very Bioaccumulative.

Legal disclaimer: This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

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