SAFETY DATA SHEET
STAR ALKA BOILER TREATMENT

PRODUCT CODE: 00950033

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

1.1. Product identifier

Product name STAR ALKA BOILER TREATMENT

Product number 00950033

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

Identified uses Star Alka Boiler Treatment is a concentrated liquid alkaline product for corrosion and deposit control in boilers. For use at all boiler pressures.

Benefits:
•Convenient liquid treatment which provides the basic alkalinity on which successful water treatment depends.
•Maintains alkalinity within optimum limits.
•Provides optimum conditions for hardness control to function.
•Assists in precipitation and blow down of magnesium salts.
•Neutralises acid conditions.
•Allows efficiency to be maintained, and reduces maintenance.
•Used for providing the required alkaline conditions within the boiler.
•To neutralise any acid condition on board.
•Assist in coagulating oil contamination.

1.3. Details of the supplier of the safety data sheet

Supplier

STAR International
Star House
Turbine Business Park
Turbine Road
Birkenhead
Merseyside
CH41 9BA
Tel: +44 (0) 1244 504 500
Fax: +44 (0) 1244 504 504
www.star-international.co.uk

1.4. Emergency telephone number

Emergency telephone +44 (0) 1244 504 500 (Office hours only)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Met. Corr. 1 - H290

Health hazards Skin Corr. 1A - H314 Eye Dam. 1 - H318

Environmental hazards Not Classified

2.2. Label elements

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Hazard pictograms

Signal word	Danger
Hazard statements	H290 May be corrosive to metals. H314 Causes severe skin burns and eye damage.
Precautionary statements	P234 Keep only in original packaging. P260 Do not breathe vapour/ spray. P264 Wash contaminated skin thoroughly after handling. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER/ doctor. P321 Specific treatment (see medical advice on this label). P363 Wash contaminated clothing before reuse. P390 Absorb spillage to prevent material damage. P405 Store locked up. P406 Store in a corrosion-resistant container with a resistant inner liner. P501 Dispose of contents/ container in accordance with national regulations.
Contains	SODIUM HYDROXIDE
Supplementary precautionary statements	P260 Do not breathe vapour/ spray. P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P321 Specific treatment (see medical advice on this label). P363 Wash contaminated clothing before reuse. P501 Dispose of contents/ container to …

2.3. Other hazards

Not available.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

SODIUM HYDROXIDE		**30-60%**
CAS number: 1310-73-2	EC number: 215-185-5	REACH registration number: 01-2119457892-27-XXXX

Classification
Met. Corr. 1 - H290
Skin Corr. 1A - H314
Eye Dam. 1 - H318

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

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SECTION 4: First aid measures

4.1. Description of first aid measures

General information Chemical burns must be treated by a physician.

Inhalation Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Get medical attention. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen.

Ingestion Rinse mouth thoroughly with water. Give plenty of water to drink. Do not induce vomiting. Get medical attention immediately.

Skin contact Remove contaminated clothing immediately and wash skin with soap and water. Continue to rinse for at least 15 minutes. Get medical attention immediately.

Eye contact Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Continue to rinse for at least 15 minutes. Get medical attention immediately.

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

Ingestion May cause chemical burns in mouth, oesophagus and stomach.

Skin contact Causes severe skin burns and eye damage.

Eye contact Causes severe skin burns and eye damage. Causes serious eye damage.

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

Notes for the doctor No specific recommendations. If in doubt, get medical attention promptly.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards In case of fire, toxic and corrosive gases may be formed.

Hazardous combustion products When heated, vapours/gases hazardous to health may be formed

5.3. Advice for firefighters

Protective actions during firefighting Containers close to fire should be removed or cooled with water.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Follow precautions for safe handling described in this safety data sheet. Provide adequate ventilation. Avoid inhalation of vapours and contact with skin and eyes.

6.2. Environmental precautions

Environmental precautions Avoid discharge into water courses or onto the ground. Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

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6.3. Methods and material for containment and cleaning up

Methods for cleaning up Stop leak if possible without risk. DO NOT touch spilled material! Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate. Absorb spillage with inert, damp, non-combustible material. Flush contaminated area with plenty of water. Collect and place in suitable waste disposal containers and seal securely. For waste disposal, see Section 13. Avoid the spillage or runoff entering drains, sewers or watercourses.

6.4. Reference to other sections

Reference to other sections Wear protective clothing as described in Section 8 of this safety data sheet.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Wear protective clothing as described in Section 8 of this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes. Provide adequate ventilation.

Advice on general occupational hygiene Do not eat, drink or smoke when using this product. Wash after use and before eating, smoking and using the toilet. Remove contaminated clothing and protective equipment before entering eating areas. Take off immediately all contaminated clothing and wash it before reuse. Eye wash facilities and emergency shower must be available when handling this product.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a well-ventilated place. Store at temperatures between 15°C and 25°C. Avoid contact with the following materials Strong acids. Use containers made of the following materials: Stainless steel. Plastic

Storage class Corrosive storage.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

SODIUM HYDROXIDE

Short-term exposure limit (15-minute): WEL 2 mg/m³
WEL = Workplace Exposure Limit

SODIUM HYDROXIDE (CAS: 1310-73-2)

DNEL	Consumer - Inhalation; Long term local effects: 1 mg/m³ Workers - Dermal; Short term local effects: 2 mg/kg/day Workers - Inhalation; Short term local effects: 2 mg/m³ Workers - Inhalation; Long term local effects: 1 mg/m³

8.2. Exposure controls

Protective equipment

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Appropriate engineering controls	Provide adequate general and local exhaust ventilation.
Eye/face protection	Wear tight-fitting, chemical splash goggles or face shield.
Hand protection	To protect hands from chemicals, gloves should comply with European Standard EN374. Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. Nitrile rubber. glove thickness 0.7mm Chloroprene rubber. glove thickness 0.7mm Butyl rubber. Protective gloves should have a minimum thickness of >0.5 mm. Viton rubber (fluoro rubber). Protective gloves should have a minimum thickness of >0.5 mm. Polyvinyl chloride (PVC). Protective gloves should have a minimum thickness of >0.5 mm. The selected gloves should have a breakthrough time of at least 8 hours
Other skin and body protection	Wear appropriate clothing to prevent any possibility of liquid contact and repeated or prolonged vapour contact.
Hygiene measures	Provide eyewash station and safety shower. Good personal hygiene procedures should be implemented. When using do not eat, drink or smoke. Wash promptly if skin becomes contaminated. Wash at the end of each work shift and before eating, smoking and using the toilet.
Respiratory protection	Respiratory protection must be used if the airborne contamination exceeds the recommended occupational exposure limit.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Colourless.
Odour	Odourless.
pH	pH (diluted solution): 14 @ 1%
Melting point	0-22°C
Initial boiling point and range	> 100°C @
Relative density	1.05-1.55 @ 20°C
Solubility(ies)	Soluble in water. Aqueous solutions are basic.
Partition coefficient	Not available.
Viscosity	75 mPa s @ 20°C

9.2. Other information

Other information	Not available.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	Reactions with the following materials may generate heat: Acids. In contact with some metals can generate hydrogen gas, which can form explosive mixtures with air.

10.2. Chemical stability

Stability	Stable at normal ambient temperatures and when used as recommended.

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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Reacts violently with water.

10.4. Conditions to avoid

Conditions to avoid Avoid heat, flames and other sources of ignition. Avoid excessive heat for prolonged periods of time.

10.5. Incompatible materials

Materials to avoid Avoid contact with acids. Avoid the following conditions: Aluminium. Zinc.

10.6. Hazardous decomposition products

Hazardous decomposition products In case of fire, toxic and corrosive gases may be formed.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Notes (oral LD_{50}) No information available.

Skin corrosion/irritation

Animal data Corrosive.

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye damage.

Respiratory sensitisation

Respiratory sensitisation No information available.

Skin sensitisation

Skin sensitisation No information available.

Germ cell mutagenicity

Genotoxicity - in vitro No information available.

Carcinogenicity

Carcinogenicity No information available.

Reproductive toxicity

Reproductive toxicity - fertility No information available.

Specific target organ toxicity - single exposure

STOT - single exposure No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure No information available.

Aspiration hazard

Aspiration hazard No information available.

Inhalation Vapour may irritate respiratory system/lungs.

Ingestion Causes severe burns. Swallowing concentrated chemical may cause severe internal injury.

Skin contact Causes severe skin burns and eye damage.

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Eye contact Causes severe skin burns and eye damage. Causes serious eye damage.

Toxicological information on ingredients.

SODIUM HYDROXIDE

Acute toxicity - oral	
Acute toxicity oral (LD_{50} mg/kg)	325.0
Species	Rat
Notes (oral LD_{50})	LD_{50} >500 mg/kg, Oral, Rabbit
Acute toxicity - dermal	
Acute toxicity dermal (LD_{50} mg/kg)	1,350.0
Species	Rabbit
Acute toxicity - inhalation	
Notes (inhalation LC_{50})	No specific test data are available.
Skin corrosion/irritation	
Skin corrosion/irritation	Causes severe burns.
Animal data	Corrosive.
Serious eye damage/irritation	
Serious eye damage/irritation	Causes serious eye damage.
Respiratory sensitisation	
Respiratory sensitisation	No information available.
Skin sensitisation	
Skin sensitisation	No information available.
Germ cell mutagenicity	
Genotoxicity - in vitro	No information available.
Carcinogenicity	
Carcinogenicity	No information available.
Reproductive toxicity	
Reproductive toxicity - fertility	No information required.
Specific target organ toxicity - single exposure	
STOT - single exposure	No information available.
Specific target organ toxicity - repeated exposure	
STOT - repeated exposure	No information available.
Aspiration hazard	
Aspiration hazard	No information available.

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Inhalation	Dust is severely irritating to the upper respiratory system. Symptoms following overexposure may include the following: Coughing. Wheezing/breathing difficulties. May cause an asthmalike shortness of breath. Sore throat. Burning sensation in mouth. Upper respiratory irritation. Tracheobronchitis, pulmonary oedema
Ingestion	Causes severe burns. May cause burns in mucous membranes, throat, oesophagus and stomach. Symptoms following overexposure may include the following: Chemical burns. Burning sensation in mouth. Nausea, vomiting. Vomiting of blood Swallowing concentrated chemical may cause severe internal injury.
Skin contact	Causes severe burns. Blistering may occur. May cause serious chemical burns to the skin. Prolonged contact causes serious tissue damage.
Eye contact	Causes serious eye damage. May cause chemical eye burns. Symptoms following overexposure may include the following: Severe irritation, burning and tearing. Corneal damage. May cause permanent damage if eye is not immediately irrigated
Acute and chronic health hazards	This chemical can be hazardous when inhaled and/or touched. Dust is severely irritating to the upper respiratory system. Corrosive. Prolonged contact causes serious eye and tissue damage.

SECTION 12: Ecological information

Ecotoxicity The product components are not classified as environmentally hazardous. However, large or frequent spills may have hazardous effects on the environment. The product may affect the acidity (pH) of water which may have hazardous effects on aquatic organisms.

Ecological information on ingredients.

SODIUM HYDROXIDE

Ecotoxicity The product may affect the acidity (pH) of water which may have hazardous effects on aquatic organisms.

12.1. Toxicity

Toxicity The product may affect the acidity (pH) of water which may have hazardous effects on aquatic organisms.

Acute aquatic toxicity

Acute toxicity - fish LC_{50}, 96 hours: 55.6 mg/l, Fish

Acute toxicity - aquatic invertebrates EC_{50}, 48 hours: 156 mg/l, Daphnia magna

Ecological information on ingredients.

SODIUM HYDROXIDE

Toxicity The product may affect the acidity (pH) of water which may have hazardous effects on aquatic organisms.

Acute aquatic toxicity

Acute toxicity - fish LC_{50}, 96 hours: 33-189 mg/l, Fish
LC_{50}, 96 hour: 45.5 mg/l, rainbow trout (Oncorhynchus mykiss)
LC_{50}, 96 hour: 125 mg/l, Freshwater fish

Acute toxicity - aquatic invertebrates EC_{50}, 48 hours: 40 - 240 mg/l, Daphnia magna

12.2. Persistence and degradability

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Persistence and degradability The product contains inorganic substances which are not biodegradable.

Ecological information on ingredients.

SODIUM HYDROXIDE

Persistence and degradability The product contains inorganic substances which are not biodegradable. The other substances in the product are slowly biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient Not available.

Ecological information on ingredients.

SODIUM HYDROXIDE

Bioaccumulative potential The product is not bioaccumulating.

Partition coefficient No information available.

12.4. Mobility in soil

Mobility The product is soluble in water.

Ecological information on ingredients.

SODIUM HYDROXIDE

Mobility The product is soluble in water.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

Ecological information on ingredients.

SODIUM HYDROXIDE

Results of PBT and vPvB assessment This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects

Other adverse effects Not available.

Ecological information on ingredients.

SODIUM HYDROXIDE

Other adverse effects The pH of the product is very high and may effect the surrounding environment as such.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information When handling waste, the safety precautions applying to handling of the product should be considered. Waste should be treated as controlled waste. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

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SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID)	1824
UN No. (IMDG)	1824
UN No. (ICAO)	1824
UN No. (ADN)	1824

14.2. UN proper shipping name

Proper shipping name (ADR/RID)	SODIUM HYDROXIDE SOLUTION
Proper shipping name (IMDG)	SODIUM HYDROXIDE SOLUTION
Proper shipping name (ICAO)	SODIUM HYDROXIDE SOLUTION
Proper shipping name (ADN)	SODIUM HYDROXIDE SOLUTION

14.3. Transport hazard class(es)

ADR/RID class	8
ADR/RID classification code	C5
ADR/RID label	8
IMDG class	8
ICAO class/division	8
ADN class	8

Transport labels

14.4. Packing group

ADR/RID packing group	II
IMDG packing group	II
ICAO packing group	II
ADN packing group	II

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

IMDG Code segregation group	18. Alkalis
EmS	F-A, S-B
ADR transport category	2
Emergency Action Code	2R

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Hazard Identification Number (ADR/RID)	80
Tunnel restriction code	(E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

SECTION 15: Regulatory information

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

EU legislation	Regulation (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 (as amended).

15.2. Chemical safety assessment

Not available.

SECTION 16: Other information

General information	Only trained personnel should use this material.
Key literature references and sources for data	Health and Safety Executive (HSE). MARPOL 73/78 Annex II - Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk. Source: European Chemicals Agency, http://echa.europa.eu/
Revision date	29/06/2020
SDS number	21586
Hazard statements in full	H290 May be corrosive to metals. H314 Causes severe skin burns and eye damage. H318 Causes serious eye damage.
Signature	Auguste Little