



SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

Star Oxygen Scavenger 72120 - PRODUCT CODE: 00951071

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

1.1 Product identifier: **Star Oxygen Scavenger 72120**
Substance type: CLP Mixture

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

Use of the Substance/Mixture : OXYGEN SCAVENGER
Identified uses : Boiler treatment under 1T per day
Recommended restrictions on use : Reserved for industrial and professional use.

1.3 Details of the supplier of the safety data sheet:

LOCAL COMPANY IDENTIFICATION

Star International, Star House, Turbine Business Park, Turbine Road,
Birkenhead, Merseyside CH41 9BA United Kingdom
Tel: +44 (0) 1244 504500
Email: enquiries@star-international.co.uk

For Product Safety information please contact: enquires@star-international.co.uk

1.4 Emergency telephone number:

Emergency telephone number : +44 (0) 1244 504 500

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Section: 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

||Chronic aquatic toxicity, Category 3 H412

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard Statements	: H412	Harmful to aquatic life with long lasting effects.
Precautionary Statements	: Prevention: P273 Disposal: P501	Avoid release to the environment. Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

None known.

Star Oxygen Scavenger 72120**Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS****3.2 Mixtures****Hazardous components**

Chemical Name	CAS-No. EC-No. REACH No.	Classification (REGULATION (EC) No 1272/2008)	Concentration: [%]
Diethyl-Hydroxyl-Amine	3710-84-7 223-055-4 01-2119962470-39	Flammable liquids Category 3; H226 Acute toxicity Category 4; H332 Acute toxicity Category 4; H312 Specific target organ toxicity - single exposure Category 3; H335 Chronic aquatic toxicity Category 2; H411	5 - < 10

For the full text of the H-Statements mentioned in this Section, see Section 16.

Section: 4. FIRST AID MEASURES**4.1 Description of first aid measures**

- If inhaled : Get medical attention if symptoms occur.
- In case of skin contact : Wash off with soap and plenty of water.
Get medical attention if symptoms occur.
- In case of eye contact : Rinse with plenty of water.
Get medical attention if symptoms occur.
- If swallowed : Rinse mouth.
Get medical attention if symptoms occur.
- Protection of first-aiders : In event of emergency assess the danger before taking action.
Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Indication of immediate medical attention and special treatment needed

- Treatment : Treat symptomatically.

Section: 5. FIREFIGHTING MEASURES**5.1 Extinguishing media**

- Suitable extinguishing media : Foam
Carbon dioxide
Dry powder
Other extinguishing agent suitable for Class B fires
For large fires, use water spray or fog, thoroughly drenching the burning material.

5.2 Special hazards arising from the substance or mixture

- Specific hazards during : Fire Hazard

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- firefighting : Keep away from heat and sources of ignition.
Flash back possible over considerable distance.
- Hazardous combustion products : Depending on combustion properties, decomposition products may include following materials:
Carbon oxides
nitrogen oxides (NO_x)

5.3 Advice for firefighters

- Special protective equipment for firefighters : Use personal protective equipment.
- Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

- Advice for non-emergency personnel : Remove all sources of ignition.
Ensure clean-up is conducted by trained personnel only.
Refer to protective measures listed in sections 7 and 8.
- Advice for emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials.

6.2 Environmental precautions

- Environmental precautions : Do not allow contact with soil, surface or ground water.

6.3 Methods and materials for containment and cleaning up

- Methods for cleaning up : Eliminate all ignition sources if safe to do so.
Stop leak if safe to do so.
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
Flush away traces with water.
For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

6.4 Reference to other sections

- See Section 1 for emergency contact information.
For personal protection see section 8.
See Section 13 for additional waste treatment information.

Section: 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

- Advice on safe handling : Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Keep away from fire, sparks and heated surfaces. Wash hands thoroughly after handling. Use only with adequate ventilation.

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Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep away from heat and sources of ignition. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.

Suitable material : The following compatibility data is suggested based on similar product data and/or industry experience: Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.

7.3 Specific end uses

Specific use(s) : OXYGEN SCAVENGER

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls

Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Individual protection measures

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

Eye/face protection (EN 166) : Safety glasses

Hand protection (EN 374) : Recommended preventive skin protection
Gloves
Nitrile rubber
butyl-rubber
Breakthrough time: 1 – 4 hours
Minimum thickness for butyl-rubber 0.3 mm for nitrile rubber 0.2 mm or equivalent (please refer to the gloves manufacturer/distributor for advise).
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin and body protection (EN 14605) : Wear suitable protective clothing.

Respiratory protection (EN 143, 14387) : When respiratory risks cannot be avoided or sufficiently limited by technical means of collective protection or by measures, methods or procedures of work organization,

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consider the use of certified respiratory protection equipment meeting EU requirements (89/656/EEC, (EU) 2016/425), or equivalent, with filter type:A-P

Environmental exposure controls

General advice : Consider the provision of containment around storage vessels.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance : Liquid

Colour : Light yellow

Odour : no data available

Flash point : 70 °C

pH : 11.4 - 11.8, 100 %

Odour Threshold : no data available

Melting point/freezing point : MELTING POINT: -8 °C

Initial boiling point and boiling range : 100 °C

Evaporation rate : no data available

Flammability (solid, gas) : no data available

Upper explosion limit : no data available

Lower explosion limit : no data available

Vapour pressure : no data available

Relative vapour density : no data available

Relative density : 1.001

Solubility(ies)

Water solubility : completely soluble

Solubility in other solvents : no data available

Partition coefficient: n-octanol/water : no data available

Auto-ignition temperature : no data available

Thermal decomposition : no data available

Viscosity, dynamic : no data available

Viscosity, kinematic : no data available

Explosive properties : no data available

Oxidizing properties : no data available

9.2 Other information

no data available

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Section: 10. STABILITY AND REACTIVITY

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid : Strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products : Depending on combustion properties, decomposition products may include following materials:
Carbon oxides
nitrogen oxides (NO_x)

Section: 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Toxicity

Product

Acute oral toxicity : There is no data available for this product.

Acute inhalation toxicity : Acute toxicity estimate : > 20 mg/l
Exposure time: 4 h
Test atmosphere: vapour

Acute dermal toxicity : Acute toxicity estimate : > 2,000 mg/kg

Skin corrosion/irritation : There is no data available for this product.

Serious eye damage/eye irritation : There is no data available for this product.

Respiratory or skin sensitization : There is no data available for this product.

Carcinogenicity : There is no data available for this product.

Reproductive effects : There is no data available for this product.

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- Germ cell mutagenicity : There is no data available for this product.
- Teratogenicity : There is no data available for this product.
- STOT - single exposure : There is no data available for this product.
- STOT - repeated exposure : There is no data available for this product.
- Aspiration toxicity : There is no data available for this product.

Components

- Acute oral toxicity : Diethyl-Hydroxyl-Amine
LD50 rat: 2,190 mg/kg

Components

- Acute inhalation toxicity : Diethyl-Hydroxyl-Amine
LC50 rat: 11.4 mg/l
Exposure time: 4 h
Test atmosphere: vapour

Components

- Acute dermal toxicity : Diethyl-Hydroxyl-Amine
LD50 rabbit: 1,300 mg/kg

Potential Health Effects

- Eyes : Health injuries are not known or expected under normal use.
- Skin : Health injuries are not known or expected under normal use.
- Ingestion : Health injuries are not known or expected under normal use.
- Inhalation : Health injuries are not known or expected under normal use.
- Chronic Exposure : Health injuries are not known or expected under normal use.

Experience with human exposure

- Eye contact : No symptoms known or expected.
- Skin contact : No symptoms known or expected.
- Ingestion : No symptoms known or expected.
- Inhalation : No symptoms known or expected.

- Further information** : no data available

Section: 12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity

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Product

- Environmental Effects : Harmful to aquatic life with long lasting effects.
- Toxicity to fish : no data available
- Toxicity to daphnia and other aquatic invertebrates : no data available
- Toxicity to algae : no data available

Components

- Toxicity to fish : Diethyl-Hydroxyl-Amine
96 h LC50 Pimephales promelas (fathead minnow): > 134 mg/l

Components

- Toxicity to daphnia and other aquatic invertebrates : Diethyl-Hydroxyl-Amine
48 h EC50 Daphnia magna (Water flea): 8.2 mg/l

Components

- Toxicity to algae : Diethyl-Hydroxyl-Amine
72 h EC50 Pseudokirchneriella subcapitata (algae): > 101 mg/l

12.2 Persistence and degradability

Product

no data available

Components

- Biodegradability : Diethyl-Hydroxyl-Amine
Result: Poorly biodegradable

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

12.5 Results of PBT and vPvB assessment

Product

- Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

no data available

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Section: 13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with the European Directives on waste and hazardous waste. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

13.1 Waste treatment methods

- Product : The product should not be allowed to enter drains, water courses or the soil.
Where possible recycling is preferred to disposal or incineration.
If recycling is not practicable, dispose of in compliance with local regulations.
Dispose of wastes in an approved waste disposal facility.
- Contaminated packaging : Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.
- Guidance for Waste Code selection : Organic wastes containing dangerous substances. If this product is used in any further processes, the final user must redefine and assign the most appropriate European Waste Catalogue Code. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable European (EU Directive 2008/98/EC) and local regulations.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (ADR/ADN/RID)

- 14.1 UN number: Not applicable.
14.2 UN proper shipping name: PRODUCT IS NOT REGULATED DURING TRANSPORTATION
14.3 Transport hazard class(es): Not applicable.
14.4 Packing group: Not applicable.
14.5 Environmental hazards: No
14.6 Special precautions for user: Not applicable.

Air transport (IATA)

- 14.1 UN number: Not applicable.
14.2 UN proper shipping name: PRODUCT IS NOT REGULATED DURING TRANSPORTATION
14.3 Transport hazard class(es): Not applicable.
14.4 Packing group: Not applicable.
14.5 Environmental hazards: No
14.6 Special precautions for user: Not applicable.

Sea transport (IMDG/IMO)

- 14.1 UN number: Not applicable.
14.2 UN proper shipping name: PRODUCT IS NOT REGULATED DURING

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14.3 Transport hazard class(es):	TRANSPORTATION
14.4 Packing group:	Not applicable.
14.5 Environmental hazards:	Not applicable.
14.6 Special precautions for user:	No
14.7 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:

INTERNATIONAL CHEMICAL CONTROL LAWS

CANADA

The substances in this preparation are listed on the Domestic Substances List (DSL), are exempt, or have been reported in accordance with the New Substances Notification Regulations.

United States TSCA Inventory

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

15.2 Chemical Safety Assessment:

A Chemical Safety Assessment has been carried out for the substance(s) that makes/make up this material or for the material itself.

Section: 16. OTHER INFORMATION

Procedure used to derive the classification according to REGULATION (EC) No 1272/2008

Classification	Justification
Chronic aquatic toxicity 3, H412	Calculation method

Full text of H-Statements

H226	Flammable liquid and vapour.
H312	Harmful in contact with skin.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H411	Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

ADN – European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR – European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS – Australian Inventory of Chemical Substances; ASTM – American Society for the Testing of Materials; bw – Body weight; CLP – Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR – Carcinogen, Mutagen or Reproductive Toxicant; DIN – Standard of the German Institute for Standardisation; DSL – Domestic Substances List (Canada); ECHA – European Chemicals Agency; EC-Number – European Community number; ECx – Concentration associated with x% response; ELx – Loading rate associated with x% response; EmS – Emergency Schedule; ENCS – Existing and New Chemical Substances (Japan); ErCx – Concentration associated with x% growth rate response; GHS – Globally Harmonized System; GLP – Good Laboratory Practice; IARC – International Agency for Research on Cancer; IATA – International Air Transport Association; IBC – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 – Half maximal inhibitory concentration; ICAO – International Civil Aviation Organization; IECSC – Inventory of Existing Chemical

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Substances in China; IMDG – International Maritime Dangerous Goods; IMO – International Maritime Organization; ISHL – Industrial Safety and Health Law (Japan); ISO – International Organisation for Standardization; KECI – Korea Existing Chemicals Inventory; LC50 – Lethal Concentration to 50 % of a test population; LD50 – Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL – International Convention for the Prevention of Pollution from Ships; n.o.s. – Not Otherwise Specified; NO(A)EC – No Observed (Adverse) Effect Concentration; NO(A)EL – No Observed (Adverse) Effect Level; NOELR – No Observable Effect Loading Rate; NZIoC – New Zealand Inventory of Chemicals; OECD – Organization for Economic Co-operation and Development; OPPTS – Office of Chemical Safety and Pollution Prevention; PBT – Persistent, Bioaccumulative and Toxic substance; PICCS – Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR – (Quantitative) Structure Activity Relationship; REACH – Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID – Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT – Self-Accelerating Decomposition Temperature; SDS – Safety Data Sheet; TCSI – Taiwan Chemical Substance Inventory; TRGS – Technical Rule for Hazardous Substances; TSCA – Toxic Substances Control Act (United States); UN – United Nations; vPvB – Very Persistent and Very Bioaccumulative

Further information

Sources of key data used to compile the Safety Data Sheet : IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

The possible key literature references and data sources which may have been used in conjunction with the consideration of expert judgment to compile this Safety Data Sheet: European regulations/directives (including (EC) No. 1907/2006, (EC) No. 1272/2008), supplier data, inter-net, ESIS, IUCLID, ERICards, Non European official regulatory data and other data sources.

Prepared By : Regulatory Affairs

Numbers quoted in the MSDS are given in the format: 1,000,000 = 1 million and 1,000 = 1 thousand. 0.1 = 1 tenth and 0.001 = 1 thousandth

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The 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, unless specified in the text.

Annex: Exposure Scenarios

Exposure Scenario: Boiler treatment under 1T per day

Life Cycle Stage : Industrial uses: Uses of substances as such or in preparations at industrial sites

Sector of use : **SU23** Electricity, steam, gas water supply and sewage treatment

Contributing scenario controlling environmental exposure for:

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Environmental release category : **ERC4** Industrial use of processing aids in processes and products, not becoming part of articles

Daily amount per site : 1000 kg

Type of Sewage Treatment Plant : none

Contributing scenario controlling worker exposure for:

Process category : **PROC15** Use as laboratory reagent

Exposure duration : 60.00 min

Operational conditions and risk management measures : Indoor

Local Exhaust Ventilation with 90% efficiency is required

General ventilation Ventilation rate per hour: 1

Skin Protection : Yes: See Section 8

Respiratory Protection : No

Contributing scenario controlling worker exposure for:

Process category : **PROC1** Use in closed process, no likelihood of exposure

Exposure duration : 60 min

Operational conditions and risk management measures : Indoor

Local Exhaust Ventilation is not required

General ventilation Ventilation rate per hour: 1

Skin Protection : Yes: See Section 8

Respiratory Protection : No

Contributing scenario controlling worker exposure for:

Process category : **PROC8a** Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities

Exposure duration : 15 min

Operational conditions and risk management measures : Indoor

Local Exhaust Ventilation is not required

General ventilation Ventilation rate per hour: 1

Skin Protection : Yes: See Section 8

Respiratory Protection : No

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Contributing scenario controlling worker exposure for:

Process category : **PROC28** Manual maintenance (cleaning and repair) of machinery

Exposure duration : 240 min

Operational conditions and risk management measures : Indoor

Local Exhaust Ventilation is not required

General ventilation Ventilation rate per hour: 1

Skin Protection : Yes: See Section 8

Respiratory Protection : No



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