SECTION 1: IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND COMPANY

1.1 Product identifier	EndoSan 3 (Stabilised Hydrogen Peroxide) CAS-No; 7722-84-1
1.2 Intended use	Cleaning and disinfection agent
1.3 Supplier details	Star International, Star House Turbine Road, Turbine Business Park Birkenhead, Merseyside, CH41 9BA T: + 44 (0) 1244 504 500 E: enquiries@star-international.co.uk www.star-international.co.uk
1.4 Emergency telephone number	+44 (0)1244 504 500 Office Hours Mon-Fri, 08.00 - 16.30 Hrs. (GMT) Recorded message outside of office hours

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification in accordance with Regulation (EU) 1272/2008 (CLP):
Not Hazardous

2.2 Label elements

Labeling in accordance with Regulation (EU) 1272/2008 (CLP):

Hazard pictograms: N/A

Signal word: N/A

Hazard statements: N/A

Precautionary statements:

Prevention:

P102+P405	Store locked up and out of reach of children.
P281	Use Personal Protective Equipment as required.

Response:

P301+P330+P313	IF SWALLOWED: Rinse mouth, get medical advice/attention.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P353	If skin irritation occurs rinse with water/shower.
P314	Get medical advice/attention if you feel unwell.

Hazardous components which must be listed on the label:

- *Hydrogen Peroxide* *7722-84-1*

2.3 Other Hazards

Physical/Chemical Hazard:

- Risk of decomposition on heating.
- Risk of decomposition in contact with incompatible products: metal oxides, metal ions (e.g. Mn, Fe, Cu, Ni, Cr, Zn), metal salts, bases and reducing agents.
- Sustains the combustion of combustible materials.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substance

N/A

3.2 Mixture

EC Index No.	International Chemical Identification	EC No.	CAS No.	%
008-003-00-9	hydrogen peroxide solution … %	231-765-0	7722-84-1	2.7-3.3

Classification		Labelling			Specific Conc. Limits, M-Factors
Hazard Class and Category Code(s)	Hazard Statement Code(s)	Pictogram, Signal Word Code(s)	Hazard Statement Code(s)	Suppl. Hazard Statement Code(s)	
Ox. Liq. 1 Acute Tox. 4 Acute Tox. 4 Skin Corr. 1A	H271 H332 H302 H314	GHS03 GHS05 GHS07 Dgr	H271 H332 H302 H314		Ox. Liq. 1; H271: C >= 70% Ox. Liq. 2; H272: 50% <= C < 70% Skin Corr. 1A; H314: C >= 70% Skin Corr. 1B; H314: 50% <= C < 70% Skin Irrit. 2; H315: 35% <= C < 50% Eye Dam. 1; H318: 8% <= C < 50% Eye Irrit. 2; H319: 5% <= C < 8% STOT SE 3; H335: C >= 35%

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Skin contact
If skin irritation occurs wash with water.

Eye contact
Rinse immediately with plenty of water, including under the eyelids, for at least 15 minutes. Remove contact lenses if possible and continue rinsing. Seek medical attention if irritation persists.

Ingestion
Rinse mouth. Give small amounts of water to drink. Do not induce vomiting. Never give anything by mouth to an unconscious person. Keep warm. Seek medical attention immediately.

Ensure injured person(s) are removed from contaminated area before treatment.

4.2 Most important symptoms and effects
Possible irritant for skin and eyes.

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

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media
The product itself does not burn – use extinguishing media suitable to scenario/surroundings.
Water or water spray/mist are preferred as they will also dilute the product.

5.2 Special hazards arising from the substance or mixture
In case of fire, hydrogen can generate oxygen what can contribute to the intensity of the fire. The product itself does not burn but it sustains the combustion of combustible material. Risk of explosion if mixed with combustible material. Pressure build-up in confined space (risk of decomposition).

5.3 Advice for firefighters
Wear self-contained breathing apparatus (SCBA) and full protection chemical suit.

5.4 Specific methods
Cool product containers / tanks with water spray.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Avoid contact with eyes. Wear Personal Protective Equipment (safety glasses/LEP & gloves).

If product is being fogged Respiratory Protective Equipment (RPE, carbon filter type FFP3) should be worn in the vicinity.

Ensure adequate ventilation, remove sources of ignition and combustible materials from area.
Keep people away from, and upwind of leak.
Do not return spilled product to containers for re-use.

6.2 Environmental precautions
Prevent undiluted product from entering drains.
Should not be released into the environment.

6.3 Methods and materials for containment and cleaning up
Prevent from spreading, use dam equipment as necessary.
Diluted solution can be washed into drains with plenty of water.
Contact the relevant local authorities.
Do not return spilled product to containers for re-use.

6.4 Reference to other sections
N/A

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling
Open container carefully in case of pressure build up, avoid exposure, wear suitable PPE.
Protect product from contamination and keep away from sources of ignition and combustible materials.
Ensure adequate ventilation, especially in confined areas.
Never return unused product to container for re-use.
When dosing water systems, ensure system is suitably vented to prevent pressure build-up during active decomposition.

7.2 Conditions for safe storage, including any incompatibilities
Keep in a cool, well-ventilated place. Keep away from heat, sources of ignition and combustible materials. Condition of containers should be checked regularly. Store in original container where possible, if transferred store in a clean receptacle equipped with a vent. Storage containers/vessels should be stainless steel or plastic (PVC/HDPE preferred).

Materials to avoid: combustible material, reducing agents, organic materials, bases, metal oxides, metal ions (e.g. Mn, Fe, Cu, Ni, Cr, Zn), metal salts, rust, dirt.

7.3 Specific end uses
For specific advice on dosage/application rates for disinfection please contact supplier direct.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

DNEL hydrogen peroxide:	MAC-value 1 ppm 1,4 mg/m^3 (human, inhalation, long-term)
PNEC hydrogen peroxide:	0.0126 mg/l (fresh water)
PNEC hydrogen peroxide:	0.0126 mg/l (marine water)
PNEC hydrogen peroxide:	0.0023 mg/kg (soil)
PNEC hydrogen peroxide:	4.66 mg/l (STP)

8.2 Exposure controls

Appropriate engineering controls;
Ensure availability of safety showers/eyewash stations/running water local to handling areas.
Ensure adequate ventilation in work area.
Ensure suitable workspace for handling containers and product including pouring between receptacles.
All receptacles and wetted transfer equipment must be free of contamination and of suitable materials of construction.

Individual protection measures;
For general handling the following minimum PPE is recommended:-


Safety eyewear (LEP/glasses) is advised.


Use gloves when handling product if skin irritation is present, e.g;

- Butyl rubber, penetration time >480 mins, thickness 0.7mm
- Natural rubber, penetration time >480 mins, thickness 1mm
- Nitrile rubber, penetration time >480 mins, thickness 0.33mm


In case of spraying/fogging wear RPE (e.g. FFP3 filter type). Need for RPE when in close proximity to pouring product should be assessed.

Environmental exposure controls;
All vessels/containers should be adequately bunded.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state:	Liquid
Color:	Colorless
Odor:	Pungent
pH (100%):	< 1.5
Freezing point:	-3 °C
Boiling point / range:	102 °C
Flash point	Not flammable
Evaporation rate:	> 1 (n-butyl acetate = 1)
Lower explosion limit:	N/A
Upper explosion limit:	N/A
Vapor pressure:	1150 Pa (by 20 °C, Total))
Relative vapor density:	Not known
Density:	1009 kg/m^3 (by 20 °C)
Solubility in water:	Completely soluble
Solubility in fat:	N/A
Part. coeff. n/octanol/water:	Log P_{ow}: -1.57 (50%)
Thermal decomposition:	-
Viscosity (dynamic):	< 20 mPa·s (50%)
Oxidizing:	May intensify fire; oxidizer

9.2 Other data

N/A

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Danger of decomposition when in contact with avoidable substances. Danger of explosion in closed systems as result of pressure buildup. Danger of decomposition upon heating.

10.2 Chemical stability

The product is stabilized. It decomposes upon heating.

10.3 Possibility of hazardous reactions

See section 10.1.

10.4 Conditions to avoid

High temperatures. UV light. Protect from contamination.

10.5 Incompatible materials

Materials to avoid: combustible material, reducing agents, organic materials, bases, metal oxides, metal ions (e.g. Mn, Fe, Cu, Ni, Cr, Zn), metal salts, rust, dirt.

10.6 Hazardous decomposition products
Decomposes into oxygen and water. Vapor may originate during decomposition.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Inhalation:	Not classified at 3%w/w H2O2
Skin contact:	"
Eye contact :	"
Swallowing:	"
Sensibilisation:	"

Of hydrogen peroxide the following toxicity data/numerical measures are available:

LD_{50} (rat, oral):	>500 mg/kg (50% concentration)
LC_{50} (rat, inhalation, 4h):	2000 mg/m^3
LD_{50} (rat, dermal):	>4000 mg/kg (50% concentration)

SECTION 12: ECOLOGICAL INFORMATION

12.1 Ecotoxicity

Not classified for 3%, data provided for 50% w/w H2O2:

Aquatic toxicity;
LC_{50}/96 h/Pimephales promelas: 22 - 33 mg/l
LC_{50}/48 h/ Leuciscus idus: 35 mg/l
EC50/ Daphnia: 2.4 – 7.7 mg/l

Toxicity to other organisms;
EC50/30 min/activated sludge/Respiratory inhibition of activated sludge/OECD test guideline 209: 466 mg/l.
EC50/3 h/activated sludge/Respiratory inhibition of activated sludge/OECD test guideline 209: > 1000 mg/l.

12.2 Persistence and degradability
Biological degradability: Hydrogen peroxide is readily biodegradable.

Chemical degradation: Decomposes into oxygen and water.

12.3 Bio-accumulative potential
Bioaccumulation is unlikely, given the low partition coefficient n-octanol/water (see SECTION 9).

12.4 Mobility in soil
See vapor pressure and solubility in water in SECTION 9. However, hydrogen peroxide will react directly when in contact with organic materials.

12.5 Results of PBT- and vPvB assessment
Hydrogen peroxide is not considered to be persistent, bio-accumulating and toxic (PBT).
Hydrogen peroxide is not considered to be very persistent and very bio-accumulating (vPvB).

12.6 Other adverse effects
No data available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product:	The product should be used completely. Rinse empty packaging thoroughly with water prior to disposal. Waste product can be flushed to drain with excess of water.
Packaging**:**	All packaging is widely recycled (PE type 1 or 2), consult with local waste authorities. Ensure packaging is thoroughly rinsed with water (internally & externally) before disposal. Empty packaging should not be used for other purposes.

SECTION 14: TRANSPORT INFORMATION

Product is not regulated for transport.

14.1 UN-number: N/A

14.2 Proper shipping name: N/A

14.3 Transport hazard class: N/A

14.4 Packing group: N/A

14.5 Environmental hazards: Not a marine pollutant

14.6 Special precautions for user: Yes – protect from heat.

14.7 Transport in bulk:
Product is not intended for transport in bulk as per Annex II of MARPOL 73/78 and the IBC code.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
The safety information of this SDS is based on Regulation (EU) 1272/2009 (CLP).

15.2 Chemical Safety Assessment

The chemical safety is based on the registration of this product and general safety information of Hydrogen Peroxide.

SECTION 16: OTHER INFORMATION

This information only concerns the above mentioned product and does not need to be valid if used with other product(s) or in any process. The information is correct and complete to our best present knowledge and is given in good faith but without warranty. It remains the user's own responsibility to make sure that the information is appropriate and complete for his special use of this product. It is recommended that the information of this safety data sheet is handed to all personnel.

Education advice:	For professional use only. Always read the label and MSDS before use.
Sources used:	Regulations, databases, literature, studies.
History/revisions:	See footnote of this document.