

SAFETY DATA SHEET

trophon NanoNebulant® / trophon Sonex-HL®

trophon NanoNebulant / Sonex-HL is intended for use exclusively with the trophon EPR device. The product is provided to the end-consumer in fully sealed low-volume (80mL) cartridges. Under normal use conditions, outlined in the manufacturer's trophon EPR User Manual and cartridge Instructions For Use (IFU), the cartridges remain sealed until they are locked into the trophon EPR device. Their contents are then converted to oxygen and water to ensure that operator exposure to trophon NanoNebulant / Sonex-HL is highly unlikely. The precautions taken when designing the trophon NanoNebulant / Sonex-HL and trophon EPR system intend for it to be used with minimal personal protective equipment (gloves only) and in standard workplace or clinical settings, including at the patient point-of-care. Special ventilation and other safety precautions are not required when used as per the manufacturer's instructions.

Outside of the standard-use scenario, in bulk-transport and storage, or in an emergency situation, the following measures are advised:

1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE SUPPLIER

1.1. Identification of the Substance/Preparation

Product Name:	trophon NanoNebulant, trophon Sonex-HL, Hydrogen Peroxide
Synonyms:	Peroxide, Hydrogen peroxide, Hydrogen dioxide
Commercial Product Name:	trophon NanoNebulant, trophon Sonex-HL
Molecular Formula:	H ₂ O ₂
Molecular Weight:	34 g/mol
Recommended use of the chemical and restrictions on use:	Disinfectant

1.2. Company/Undertaking Identification

Company:	Nanosonics Limited
Address:	14 Mars Road, Lane Cove NSW 2066, Australia
Telephone:	+61 2 8063 1600
Distributed in New Zealand by	
Company:	Bio Decon
Address:	5 Argus Place, Glenfield Auckland 0627, New Zealand
Telephone:	+64 9 442 4025

1.3. Emergency Telephone Number

Telephone:	Within Australia:	If ringing from overseas:
	Toll free: 1800 039 008	Toll free: +800 2436 2255
	Land line: 03 9573 3112	Land line: +61 3 9573 3112
		USA/Canada: (+1) 877 715 9305

2. HAZARDS IDENTIFICATION

GHS Classification

Oxidising liquids (category 1)

Acute toxicity, oral (category 4)

Skin irritation (category 1)

Serious eye damage/eye irritation (category 1)

GHS Label element



Oxidiser



Corrosive



Irritant

Signal word: Danger

Hazard Statements

H332: Harmful if inhaled.

H302: Harmful if swallowed.

H315: Causes skin irritation.

H318: Causes serious eye damage.

H335: May cause respiratory irritation.

Precautionary statements

Prevention

P261: Avoid breathing dust/ mist/ vapours/ spray.

P270: Do not eat, drink or smoke when using this product.

P280: Wear protective gloves/protective clothing/eye protection/ face protection.

Response

P301 + P312: IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.

P302 + P352: IF ON SKIN: Wash with plenty of soap and water.

P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position 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 or doctor/physician.

P312: Call a POISON CENTER or doctor/physician if you feel unwell.

P330: Rinse mouth.

P332 + P313: If skin irritation occurs: Get medical advice/attention.

P362: Take off contaminated clothing and wash before reuse.

P501: Dispose of container in accordance with local/regional/national regulation.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance Name:	Hydrogen Peroxide
CAS-No.:	7722-84-1
Symbol(s):	O, C
R-phrases(s):	R 8, R35
Concentration:	>=34.90 - <= 37.0%

4. FIRST AID MEASURES

If inhaled

Remove person to fresh air. If not breathing, give artificial respiration.

Consult a physician if irritation occurs and persists.

In case of skin contact

Remove contaminated clothing.
Wash with soap and copious amount of water.
Consult a physician if irritation occurs and persists.

In case of eye contact

Immediately rinse thoroughly with plenty of water for at least 15 minutes and seek medical attention.

If swallowed

Call a poison control centre or physician immediately. Do NOT induce vomiting unless directed by a physician.

If conscious: Rinse mouth thoroughly with water.

If unconscious: Never give anything by mouth to an unconscious person.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media

Foam, dry powder, carbon dioxide or water spray.

Fire / Explosion Hazards

Product is non-combustible. Decomposition releases oxygen which may intensify fire.

Special protective equipment for fire-fighters

In the event of a fire, wear self-contained breathing apparatus. Use personal protective equipment.

Further information

Evacuate personnel to safe areas.

Keep unauthorised persons away.

Keep out unprotected persons.

Use water spray to cool unopened containers.

HAZCHEM Code:2P

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Product causes chemical burns.

Wear personal protective equipment; see section 8.

Avoid breathing vapours, mist or gas and ensure adequate ventilation.

Evacuate personnel to safe areas.

Keep out unprotected persons.

Keep away from incompatible products.

Environmental precautions

Avoid release into the environment. If the product contaminates rivers, lakes or drains inform respective authorities.

Small quantities may be discharged into the sewer when diluted with large quantities of water.

Methods and materials for containment and clean up

If possible, dam large quantities of liquid with sand or earth.

Dilute with plenty of water.
Do not add chemical products.
Never return spills to original packaging for re-use.
Soak up with inert absorbent material.
Dispose of in accordance with local regulations.

7. HANDLING AND STORAGE

Precaution for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from ignition sources and organics.
Use only equipment and materials which are compatible with the product.

Conditions for safe storage, including any incompatibilities

To maintain product quality:
Keep in a cool place (temperature range from -10°C to 25°C for NanoNebulant and 59°F to 77°F for Sonex-HL).
Keep in a dry and well-ventilated area.
Keep away from heat and direct sun-light.
Keep away from incompatible products.
Keep away from combustible material.
Keep in original packaging, closed.
Keep upright as specified on packaging.

Specific use(s)

Use only with the trophon EPR.

Packaging material

HDPE bottle
350um fibre board and ecocote

Other information

Refer to protective measures listed in section 8.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Occupational Exposal Limits

Chemical Name	CAS-No.	Value	Control parameters	Basis
Hydrogen peroxide	7722-84-1	TWA	1 ppm	ACGIH
		TWA	1 ppm 1.4 mg/m ³ 75 ppm IDLH	NIOSH
		TWA	1 ppm 1.4 mg/m ³	OSHA

Engineering measures

Ensure adequate ventilation. Refer to the personal protective measures below.

Personal protective equipment

Respiratory protection:

No personal respiratory protective equipment is normally required. However, if workplace exposure limit is exceeded, apply respiratory protective equipment.

Use only respiratory protection that conforms to the international/national standards.

Hand protection:

Wear suitable gloves.

Recommended materials: PVC, rubber

Eye protection:

For normal handling of cartridges, when used with the trophon EPR according to the manufacturers' instructions, no eye protection is normally required.

If in a spill or bulk-handling situation, chemical resistant goggles must be worn.

If risk of splashing, chemical proof goggles/face shield must be worn.

Skin and body protection:

For normal handling of cartridges, when used with the trophon EPR according to the manufacturers' instructions, body protection is not normally required, except for gloves.

If in a spill, bulk-handling or direct chemical contact situation, a protective suit must be worn.

If risk of splashing, PVC or rubber apron/boots must be worn.

Hygiene measures:

Handle in accordance with good hygiene and safety practice.

When using, do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

General Information (appearance, odour)

Appearance:	Liquid
Colour:	Colorless
Odour:	Slightly pungent

Important Health Safety and Environmental Information

pH:	1-4
Boiling point/range:	108°C (H ₂ O ₂ 35%)
Flash point:	Does not flash
Flammability (solid, gas):	The product is not flammable.
Explosive properties:	Explosive only at high temperatures and when in contact with organic solvents.
Oxidizing properties:	Remarks: Oxidizer
Vapour pressure:	12 mbar Temperature: 20°C Remarks: Total pressure (H ₂ O ₂ + H ₂ O) (H ₂ O ₂ 50%) 72 mbar Temperature: 50°C Remarks: Total pressure (H ₂ O ₂ + H ₂ O) (H ₂ O ₂ 50%) 1 mbar Temperature: 30°C Remarks: Partial pressure (H ₂ O ₂ + H ₂ O) (H ₂ O ₂ 50%)
Relative density/ Density:	1.13 (H ₂ O ₂ 35%)
Solubility:	Soluble in: Water Polar organic solvents
Partition coefficient (n- octanol/ water):	Log Pow: -1.1
Viscosity:	1.07mPa.s Temperature: 20°C (H ₂ O ₂ 27.5%)
Vapour density:	1 (H ₂ O ₂ 50%)
Miscibility in water:	Completely miscible

10. STABILITY AND REACTIVITY

Reactivity:

Reactive with reducing agents, organic solvents, organic compounds and metals.

Chemical Stability:

Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. Contains a stabilizer.

Possibility of hazardous reactions:

Explosive at high temperatures and when in contact with organic solvents.

Conditions to avoid:

Direct sunlight and heat.

Incompatible materials:

Strong acids, strong bases, heavy metal salts, reducing agents and combustible material.

Hazardous decomposition products:

Oxygen, steam.

11. TOXICOLOGICAL INFORMATION

Toxicological data	Health effects
Acute oral toxicity: LD50, rat, 1,232 mg/kg (H ₂ O ₂ 35%)	Inhalation: Irritation to respiratory tract and can cause inflammation of the respiratory tract and pulmonary oedema.
Acute inhalation toxicity: LD50, 4h, rat, 2,000 mg/m ³ (Hydrogen peroxide) LC0, 1h, mouse, 2,170 mg/m ³ (Hydrogen peroxide)	Eye contact: Extreme irritation, watering, redness and swelling of the eyelids. Risk of irreversible damage.
Acute dermal toxicity: LD50, rabbit, >2,000 mg/kg (H ₂ O ₂ 35%)	Skin contact: Causes caustic burns. Irritation and temporary whitening at contact area.
Skin irritation: Rabbit, irritant (skin) (H ₂ O ₂ < 50%)	Ingestion: May lead to bleeding of the mucosa in the mouth, oesophagus and stomach. May be fatal if swallowed.
Eye irritation: Rabbit, Risk of serious damage to eyes. (H ₂ O ₂ 35%)	
Sensitization: Guinea pig: not sensitizing	
Chronic toxicity: Oral, prolonged exposure, rat/mouse, Target organs: gastro-intestinal system, observed effect	
Genetic toxicity in vitro: In vitro, without metabolic activation, mutagenic effects.	
Genetic toxicity in vivo: In vivo, animal testing did not show any mutagenic effects.	

12. ECOLOGICAL INFORMATION

Ecotoxicity

Acute toxicity	Chronic toxicity
Fishes, Pimephales promelas, LC50, 96h, 16.4 mg/l	Remarks: no data available
Fishes, Pimephales promelas, NOEC, 96h, 5 mg/l	Algae, various species, EC50, from 72 – 96h, from 3.7 – 160 mg/l
Crustaceans, Daphnia pulex, EC50, 48h, 2.4 mg/l	Remarks: fresh water
Crustaceans, Daphnia pulex, NOEC, 48h, 1 mg/l	Algae, Nitzschia closterium, EC50, from 72 – 96, 0.85 mg/l
	Remarks: salt water

Persistence and degradability

Abiotic degradation	Biodegradation
Air, indirect photo-oxidation, t 1/2 from 10 - 20 h Conditions: sensitizer: OH radicals	Aerobic, t 1/2 < 1 min Conditions: biological treatment sludge Remarks: rapid and considerable biodegradation
Water, redox reaction, t 1/2 from 2.5 d, 10000 ppm Conditions: mineral and enzymatic catalysis, fresh water	Aerobic, t 1/2 from 0.3 - 2 d Conditions: fresh water Remarks: rapid and considerable biodegradation
Water, redox reaction, t 1/2 from 20 d, 100 ppm Conditions: mineral and enzymatic catalysis, fresh water	Anaerobic Remarks: not applicable
Water, redox reaction, t 1/2 from 60 h Conditions: mineral and enzymatic catalysis, salt water	Effects on waste water treatment plants, Inhibitor > 200 mg/l Remarks: inhibitory action
Soil, redox reaction, t 1/2 from 15 h Conditions: mineral catalysis	

Bioaccumulative potential

log Pow -1.1

Result: non-bioaccumulable (enzymatic metabolism)

Other adverse effects

Not known

13. DISPOSAL CONSIDERATIONS

Waste from unused products

In accordance with National, Federal, State and Local regulations.

Contaminated packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal and in accordance with National, Federal, State and Local regulations.

14. TRANSPORT INFORMATION

Mode of transport: Sea, road and rail.

Mode of transport to avoid: Air – STRICTLY NO AIR FREIGHT.

Other information:

HI/UN-No:	58/2014
Transport Hazard Class:	5.1 Oxidizing Agent
Subrisk 1:	8 Corrosive
Packing Group:	II
Proper Shipping Name or Technical Name:	HYDROGEN PEROXIDE, AQUEOUS SOLUTION
Marine Pollutant:	No
IMO Labels:	OXIDISING AGENT + CORROSIVE
ADG Labels:	5.1 + 8
IMDG EMS Fire:	F-H
IMDG EMS Spill:	S-Q
HAZCHEM Code:	2P

15. REGULATORY INFORMATION

Label

Hazardous components which must be listed on the label: Hydrogen peroxide

Symbol(s)	C	Corrosive
R-phrases(s)	R34	Causes burns
S-phrases(s)	S1/2	Keep locked up and out of the reach of children
	S3	Keep in a cool place
	S28	After contact with skin, wash immediately with plenty of water.
	S36/39	Wear suitable protective clothing and eye/face protection
	S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)

See Section 2 for applicable GHS and CLP Hazard and Precautionary Statements

International Inventories

Toxic Substance Control Act list (TSCA)	In compliance with inventory.
Australian Inventory of Chemical Substances (AICS)	In compliance with inventory.
EU list of existing chemical substances (EINECS)	In compliance with inventory.
New Zealand HSNO regulatory information: HSR001326 class 5.1.1B	In compliance with inventory.

The German Federal Water Management Act

Water Hazard Class (WHC):

Class	WHC 1
Hazard Potential	Slightly hazardous to water

16. OTHER INFORMATION

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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. This applies to the product which conforms to the specification, unless otherwise stated.

Reason for issue: Alignment to GHS requirements