

# Safety Data Sheet



Product name:

**Oxidising solid, part of an oxygen generator**

Document No: LB01-00420

Issue: 1

Revision date: 30 August 2021

Compiled in accordance with REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758  
Prepared according to GB CLP which is the retained CLP Regulation (EU) No 1272/2008, as amended for Great Britain

Section 1		IDENTIFICATION OF SUBSTANCE / PREPARATION AND OF THE COMPANY
1.1	Product identifier	CAN 33
1.2	Relevant identified uses of the substance or mixture and uses advised against	Relevant identified uses: A source of oxygen for life support or industrial applications Uses advised against: No data Reason why uses advised against: No data
1.3	Details of the supplier of the safety data sheet	Molecular Products Ltd Parkway, Harlow Business Park, Harlow, Essex, CM19 5FR, UK +44 (0)1279 445111 (I) sds@molprod.com (I) Only available during office hours 0900 – 1700 GMT
1.4	Emergency telephone number	+44 (0) 1279 445111 (office hours) +44 (0)1865 407333 (out of hours, English speaking) China (NRCC): +86 532 8388 9090, Mexico: +52 555 004 8763, Chile: +56 225 829 336, Brazil: +55 11 3197 5891

Section 2		HAZARDS IDENTIFICATION
2.1	Classification of the substance or mixture	
2.1.1	Classification according to Regulation (EC) No 1272/2008 (CLP/GHS)	
	Ox Sol 1	H271
	Acute Tox. 4	H302
2.1.2	Additional information – see section 1.6 for full text of H statements	
2.2	LABELLING ELEMENTS	
2.2.1	Labelling in accordance with EC Regulation No 1272/2008 (CLP/GHS)	
	Pictogram(s)	
	Signal word	DANGER
	Hazard statements	
	H271	May cause fire or explosion; strong oxidiser
	H302	Harmful if swallowed
	H314	Causes severe skin burns and eye damage
	Precautionary statements	
	P220	Keep/store away from organic and combustible materials.
	P270	Do not eat, drink, or smoke when using this product
	P280	Wear protective gloves/protective clothing/eye protection/face protection.
	P391	Collect spillage
	P301/312	If swallowed: call a poison centre or doctor/physician if you feel unwell
	P371/380/375	In case of fire: evacuate area. Fight fire remotely due to the risk of explosion
2.3	Other hazards	
	None known	

Section 3		COMPOSITION / INFORMATION ON INGREDIENTS
	Chemical characterisation	Mixture of inorganic substances
	Chemical name	CAS-No
		EC No.
		Classification
		Concentration
	Sodium Chlorate	7775-09-9
		231-887-4
		Ox Sol. 1 H271, Acute Tox. 4 H302
		> 85%

	Barium Peroxide	1304-29-6	215-128-4	Ox Sol. 2 H272 Acute Tox. 4 H302 Causes severe skin burns and eye damage H314 Acute Tox. 4 H332	< 4%
	Iron Powder	7439-89-6	231-096-4	Not classified	< 8%

Section 4		FIRST AID MEASURES
4.1	Description of measures	
	Inhalation	Remove casualty to fresh air and provide warmth and rest. Seek medical attention if you feel unwell
	Skin contact	Immediately remove contaminated clothing. Flush contaminated skin with plenty of water with soap and more water. Seek medical advice if necessary
	Eye contact	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Avoid strong stream of water due to the risk of mechanical damage to the cornea. Seek medical advice if necessary
	Ingestion	Do NOT induce vomiting. Rinse mouth out with water and then drink plenty of water. Seek medical advice if necessary
4.2	Most important effects/symptoms both acute and delayed	
	Inhalation	Persons exposed to high levels of the product are susceptible to respiratory diseases. The repeated inhalation of dust may cause damage to the central nervous system. Harmful if inhaled
	Eye contact	Significant concentrations of dust or direct ingress of substances into the eyes may cause irritation, redness, tearing, burning and conjunctivitis
	Skin contact	May cause irritation, redness, dryness, itching and inflammation
	Ingestion	May cause irritation of the mucous membrane of the digestive tract and stomach, nausea, vomiting diarrhoea and stomach pain. Harmful if swallowed
4.3	Immediate/special treatment	
		Remove affected person from the contaminated product. In the event of health problems, immediately consult your doctor or a centre of toxicological concern. Provide the information contained in the SDS. If unconscious do not give anything by mouth
4.1	Description of measures	
	Inhalation	Remove casualty to fresh air and provide warmth and rest
	Skin contact	Clean areas of skin affected immediately with soap and plenty of water. If necessary, seek medical advice
	Eye contact	Immediately wash out eye thoroughly with plenty of water until irritation subsides. If necessary, consult an eye specialist/ophthalmologist
	Ingestion	If swallowed, do NOT induce vomiting. Drink plenty of water and, if necessary, seek medical advice
4.2	Most important effects/symptoms	
		No data
4.3	Immediate/special treatment	
		Treatment as described above

Section 5		FIRE FIGHTING MEASURES
5.1	Extinguishing media	To suit local surroundings (e.g. chemical powder, carbon dioxide and dry sand).
	Unsuitable media	Water jet
5.2	Special hazards	Avoid inhalation of combustion products
5.3	Advice for fire fighters	Wear full protective equipment and self-contained breathing apparatus. If containers are exposed to high temperatures cool with water and if possible, remove from area. Take up mechanically. Keep out of drains, surface water and soil. Place water waste in containers and dispose of contents/container to authorised recipient of hazardous waste

Section 6		ACCIDENTAL RELEASE MEASURES
6.1	Personal precautions	Adhere to personal protective measures
6.2	Environmental precautions	Do not allow to get into wastewater or waterways; if this occurs, inform the relevant water authority at once
6.3	Methods and materials for cleaning up	In the event of spillage, take up large and small fragments mechanically (e.g. sweep or vacuum up, small fragments being first treated with damp sand) into tightly closed containers. Adhere to personal protective measures. Label container and dispose of as prescribed. Do NOT sweep up dry dust (possibility of explosion)
6.4	Reference to other sections	See section 8 for personal protective equipment

Section 7		HANDLING AND STORAGE
7.1	Precautions for safe handling	Handle in accordance with good hygiene and safety practice. Avoid the raising and deposition of dust
7.2	Conditions for safe storage	Ensure adequate ventilation of the storage area. Keep containers tightly closed, cool and dry, avoiding direct sunlight and away from organic, oxidising combustible materials and strong acids
7.3	Specific end use(s)	See section 1.2

Section 8		EXPOSURE CONTROLS / PERSONAL PROTECTION							
8.1		Workplace Exposure Limits (WELs) have been assigned by the HSE (EH40/2020)							
	TWA (8 hours)	ppm	10	mg/m <sup>3</sup>	Barium sulphate (inhalable dust)				
	TWA (8 hours)	ppm	4	mg/m <sup>3</sup>	Barium sulphate (respirable dust)				
	TWA (8 hours)	ppm	5	mg/m <sup>3</sup>	Data for sodium hydrogen sulphite				
Substance name		Sodium chlorate							
EC number		231-887-4		CAS number		7775-09-9			
DNELs									
		Workers				Consumers			
	Route of exposure	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic	Acute effects local	Acute effects systemic	Chronic effects local	Chronic effects systemic
	Oral	Not required				No data	No hazard identified	No data	0.05 mg/kg bw/day
	Inhalation	No hazard identified	No hazard identified	No hazard identified	5 mg/m <sup>3</sup>	No hazard identified	No hazard identified	No hazard identified	No hazard identified
	Dermal	No hazard identified	No hazard identified	No hazard identified	3.08 mg/kg bw/day	No hazard identified	No hazard identified	No hazard identified	No hazard identified
PNECs									
Environmental protection target		PNEC							
Fresh water		1 mg/L							
Freshwater sediments		No hazard identified							
Marine water		1 mg/L							
Marine sediments		No hazard identified							
Food chain		0.01 g/kg food							
Microorganisms in sewage treatment		100 mg/L							
Soil (agriculture)		3.33 mg/kg soil dw							
Air		No hazard identified							
Substance name		Barium peroxide							
EC number		215-128-4		CAS number		1304-29-6			
DNELs (No data)									
		Workers				Consumers			
	Route of exposure	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic	Acute effects local	Acute effects systemic	Chronic effects local	Chronic effects systemic
	Oral	Not required				No data	No data	No data	No data
	Inhalation	No data	No data	No data	No data	No data	No data	No data	No data
	Dermal	No data	No data	No data	No data	No data	No data	No data	No data
PNECs (No data)									
Environmental protection target		PNEC							
Fresh water		No data							
Freshwater sediments		No data							
Marine water		No data							
Marine sediments		No data							
Food chain		No data							
Microorganisms in sewage treatment		No data							
Soil (agriculture)		No data							

	Air								
	Substance name	Iron powder							
	EC number	231-096-4	CAS number	7439-89-6					
	DNELs								
		Workers				Consumers			
	Route of exposure	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic	Acute effects local	Acute effects systemic	Chronic effects local	Chronic effects systemic
	Oral	Not required				No data	No hazard identified	No data	0.71 mg/kg bw/day
	Inhalation	No hazard identified	No hazard identified	3 mg/m <sup>3</sup>	No hazard identified	No hazard identified	No hazard identified	1.5 mg/m <sup>3</sup>	No hazard identified
	Dermal	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified	No hazard identified
	PNECs								
	Environmental protection target				PNEC				
	Fresh water				no data: aquatic toxicity unlikely				
	Freshwater sediments				insufficient hazard data available				
	Marine water				no data: aquatic toxicity unlikely				
	Marine sediments				insufficient hazard data available				
	Food chain				insufficient hazard data available				
	Microorganisms in sewage treatment				no data: aquatic toxicity unlikely				
	Soil (agriculture)				insufficient hazard data available				
	Air				no hazard identified				
8.2	Exposure controls								
	Engineering controls	Mandatory general regulations on occupational health. For hazardous constituents, do not allow the environmental and workplace concentration limits to exceed values stated above. Ensure that exposed skin is washed and contaminated clothing is disposed of /cleaned if reused. Do not eat, drink, or smoke. Avoid skin and eye contact, wash hands and face before and after working with the product. Avoid inhalation of dust and provide adequate local and general ventilation							
	Personal protection	Observe normal standards for handling chemicals Wash hands before breaks and after work Avoid inhalation of dust if raised Wear personal protective equipment appropriate to the task (see below)							
	Eye protection	Wear suitable protective glasses/goggles e.g. Polycarbonate (EN 166)							
	Skin protection	Wear protective chemical resistant gloves (EN 374, PVC, thickness 1.5mm) break through time <480 mins							
	Respiratory protection	Wear approved dust mask or respirator with filter APF 10/APF 20							
	Other protection	Protective overalls. Concentrations of hazardous substances should be monitored in accordance with recognised test methods. Mode, method, type and frequency of testing (measurement of harmful factors) should meet the requirements of local/regional/national laws							
	Environmental exposure	Do not introduce the product to ground water, sewage, wastewater, or soil							



<b>Section 9</b>	<b>PHYSICAL AND CHEMICAL PROPERTIES</b>			
9.1	Basic physical and chemical properties			
	Physical form	Solid	Colour	Grey
	Odour	Odourless	pH	Not determined
	Boiling pt/range	Not determined. Decomposes at approx. 300°C	Melting pt/range	Approx. 200°C
	Flash point	Not applicable	Relative density	2.0g/cm <sup>3</sup>
	Water solubility	Partial	Odour threshold	Not applicable
	Evaporation rate	Not applicable	Flammability	Not applicable
	Explosion limits	Not applicable	Vapour pressure	Not applicable
	Vapour density	Not applicable	Partition coeff. LogPoct/water	Not applicable
	Auto-ignition temperature	Not applicable	Viscosity	Not applicable
	Explosive properties	Not determined	Oxidising properties	Not determined
	Decomposition temperature	Not determined		
9.2	Other information	Strong oxidiser		

Section 10		STABILITY AND REACTIVITY
10.1	Reactivity	Can burn with exploding violence if in contact with fuels or organic material
10.2	Chemical stability	Stable under normal conditions of handling
10.3	Hazardous reactions	Decomposes to form oxygen on heating or ignition (friction or impact can cause ignition)
10.4	Conditions to avoid	Contact with water and organic materials
10.5	Incompatible material	Organic material
10.6	Hazardous decomposition products	Chlorine and chlorine dioxide can be evolved following contact with strong acids

Section 11		TOXICOLOGICAL INFORMATION					
11.1	Information on hazard classes as defined in Regulation (EC) No 1272/2008						
	Information is for barium peroxide (EC 215-128-4)						
	Hazard class	Method	Species	Route of exposure	Effective dose	Exposure time	Results
	Acute toxicity	LD <sub>50</sub>	Rat	oral	No data	No data	the study does not need to be conducted because the substance is classified as corrosive to the skin
		LD <sub>50</sub>	rabbit (oral)		1200 mg/kg	No data	Data for sodium chlorate
	Skin corrosion/irritation	Corrosive to skin causing irreversible damage					
	Serious eye damage/irritation	Cause severe damage to eyes. Study not undertaken as it causes irreversible damage to skin.					
	Respiratory or skin sensitisation	This study does not need to be conducted because the substance is classified as skin corrosion (Category I, IA, IB or IC)					
	Germ cell mutagenicity	Not mutagenic					
	Carcinogenicity	Not carcinogenic					
	Reproductive toxicity	No data					
	Summary of evaluation of the CMR properties	Not a CMR					
	STOT-single exposure	This study does not need to be conducted because the substance is classified as skin corrosion (Category I, IA, IB or IC)					
	STOT-repeated exposure	This study does not need to be conducted because the substance is classified as skin corrosion (Category I, IA, IB or IC)					
	Aspiration hazard	No data					
11.2	Information on other hazards						

Section 12		ECOLOGICAL INFORMATION
12.1	Toxicity (information for sodium chlorate)	
	Acute (short-term) toxicity:	Fish: EC50 >1000 mg/L Crustacea: EC50 >1000 mg/L Algae/aquatic plants EC50 > 129 mg/L Other organisms:
	Chronic (long-term) toxicity	Fish: NOEC >= 500 mg/L Crustacea: NOEC >= 500 mg/L Algae/aquatic plants NOEC 62.5 mg/L Other organisms No data
12.2	Persistence and degradability	Abiotic Degradation: no data Physical- and photo-chemical elimination: no data Biodegradation: no data
12.3	Bioaccumulative potential	Partition coefficient n-octanol /water (log Kow): < -2.9 Bioconcentration factor (BCF): No data
12.4	Mobility in soil	Known or predicted distribution to environmental compartments: Surface tension: Not applicable Adsorption/Desorption: Not expected
12.5	Results of PBT and vPvB assessment	Not applicable
12.6	Endocrine disrupting properties	Not regarded as an EDC
12.7	Other adverse effects	None known

Section 13		DISPOSAL CONSIDERATIONS
13.1	Waste treatment methods	
	Product/ Packaging disposal	If possible, recycle to supplier or approved recycling company. If not (e.g. designated as waste), dispose of in accordance with national and local authority regulations, e.g. The Hazardous Waste (England & Wales) Regulations 2005. Material is a special waste under UK legislation. Treat empty containers in the same way as the product. If possible, wash out thoroughly and recycle
	Waste treatment-relevant information	Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
	Sewage disposal-relevant information	No data
	Other disposal recommendations	Contaminated packaging, dispose of as unused product.

Section 14		TRANSPORT INFORMATION				
14.1	United Nations number (ADR, IMDG, IATA)	UN 1479	14.2	Proper shipping name (ADR, IMDG, IATA)	OXIDISING SOLID N.O.S.	
14.3	Transport class(s) (ADR, IMDG, IATA)	5.1		14.4	Packing group (ADR, IMDG, IATA)	II
14.5	Environmental hazards (ADR, IMDG, IATA)	The product should not be marked as a marine pollutant	14.6	Special procedures (ADR, IMDG, IATA)	 This substance is classified as corrosive	
14.7	Transport in bulk	Not applicable				

Section 15		REGULATORY INFORMATION
15.1	Safety, health and environmental regulations	The SDS has been updated in accordance with EC Regulation No 1272/2008 (CLP/GHS)
15.2	Chemical safety assessment	Not applicable

Section 16		OTHER INFORMATION
	Further information	The SDS has been revised in accordance with EC Regulation 1272/2008 (CLP). The classification of this product has changed. Sodium chlorate has lost its classification of H411, Toxic to aquatic life with long lasting effects, and barium peroxide has gained, H314 Causes severe skin burns and eye damage.
		Comply with COSHH Regulations
		Hazard statements referred to in sections 2/3: H271: May cause fire or explosion; strong oxidiser H272: May cause fire or explosion; strong oxidiser. H302: Harmful if swallowed H314 Causes severe skin burns and eye damage. H332: Harmful if inhaled.
	Sources of data	Other suppliers' safety data sheets, Annex VI of the CLP Regulation (EC) No 1272/2008,
	Prepared by	Dr Patricia Wormald, Molecular Products, <a href="mailto:PW@molprod.com">PW@molprod.com</a> Neil Stearn, Cambridge Environmental Assessments; <a href="mailto:neil.stearn@cea-res.co.uk">neil.stearn@cea-res.co.uk</a>
	Date of issue	30 August 2021
	This information is based on our present state of knowledge and is intended to describe our products from the point of view of the safety requirements. It should not be construed as guaranteeing specific problems	