

Safety Data Sheet
acc. to OSHA HCS

Printing date: 03/05/2015

Version 10

Reviewed on: 03/05/2015

1 Identification

- **Product identifier**
- **Product name:** Sodium perborate monohydrate
- **CAS Number:**
10332-33-9
- **EC number:**
234-390-0
- **Index number:**
005-019-00-8
- **REACH-Registration number:** 01-2119516039-43-0002
- **Relevant identified uses of the substance or mixture and uses advised against**
- **Application of the substance / the preparation:**
Bleaching component of washing and cleaning agents
Manufacture and Formulation of Sodium perborate
Manufacture of medical devices
All professional uses
Use as medical device
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**

Site Althofen:

Evonik Treibacher GmbH
Auer von Welsbach Strasse 1
9330 Althofen
AUSTRIA
Telephone: +43 (0) 4262 505-577 / +43 (0) 4262 505-290
Fax: +43 (0) 4262 505-406

- **Information department:** msdsetg@treibacher.com
- **Emergency telephone number:**
+43 (0) 4262 505-290 / +43 (0) 4262 505-291
+43 (0) 664-60505-290
+43 (0) 1 406 4343-0 (Austrian Poison Information Centre)
CHEMTREC - USA / CA (24-h emergency number): +1 800 424 9300

2 Hazard(s) identification

- **Classification of the substance or mixture**
Ox. Sol. 3 H272 May intensify fire; oxidizer.
Repr. 1B H360 May damage fertility or the unborn child.
Eye Dam. 1 H318 Causes serious eye damage.
Acute Tox. 4 H302 Harmful if swallowed.
STOT SE 3 H335 May cause respiratory irritation.

- **Label elements**
- **GHS label elements**
The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS03



GHS05



GHS07



GHS08

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· **Signal word** Danger

· **Hazard statements**

- H272 May intensify fire; oxidizer.
- H302 Harmful if swallowed.
- H318 Causes serious eye damage.
- H360 May damage fertility or the unborn child.
- H335 May cause respiratory irritation.

· **Precautionary statements**

- P221 Take any precaution to avoid mixing with combustibles.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P202 Do not handle until all safety precautions have been read and understood.
- P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P312 Call a poison center/doctor if you feel unwell.
- P403+P233 Store in a well-ventilated place. Keep container tightly closed.
- P411+P235 Store at temperatures not exceeding 86°F. Keep cool.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Hazard description:**

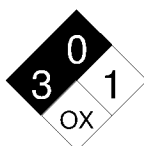
· **WHMIS-symbols:**

- C - Oxidizing materials
- D2A - Very toxic material causing other toxic effects
- D2B - Toxic material causing other toxic effects



· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



- Health = 3
- Fire = 0
- Reactivity = 1

The substance possesses oxidizing properties.

· **HMIS-ratings (scale 0 - 4)**



- Health = 3
- Fire = 0
- Reactivity = 1

· **Other hazards** Not applicable

· **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Substances**

· **CAS No. Description**

- 10332-33-9 Sodium perborate monohydrate

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- **Identification number(s)**
- **EC number:** 234-390-0
- **Index number:** 005-019-00-8

· **Components:**

CAS: 10332-33-9	Sodium perborate monohydrate	≥ 94%
EINECS: 231-556-4	⚠ Ox. Sol. 3, H272; ⚠ Repr. 1B, H360; ⚠ Eye Dam. 1, H318; ⚠ Acute Tox. 4, H302; STOT SE 3, H335	
Index number: 005-019-00-8		
Reg.nr.: 01-2119516039-43-0002		

· **SVHC**

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· **Additional information:**

Molecular formula: NaBO₃•H₂O / NaBO₂•H₂O₂
Molecular weight: 99.83 g/mol
Further CAS-No.: 7632-04-4
Further EINECS-No.: 231-556-4

4 First-aid measures

- **Description of first aid measures**
- **General information:** Personal protection for the First Aider.
- **After inhalation:**
Take affected persons into fresh air and keep quiet.
Seek medical treatment in case of complaints.
- **After skin contact:**
Immediately rinse with water.
If skin irritation continues, consult a doctor.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
If swallowed, rinse mouth with water (only if the person is conscious).
Drink plenty of water and provide fresh air.
Do not induce vomiting; immediately call for medical help.
- **Information for doctor:** Treat symptomatically.
- **Most important symptoms and effects, both acute and delayed**
Gastric or intestinal disorders
Irritation of the gastric mucosa
Changes of blood parameters
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
Water
Foam
- **For safety reasons unsuitable extinguishing agents:**
Carbon dioxide
Organic media
- **Special hazards arising from the substance or mixture**
In case of fire, the following can be released:

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Oxygen

Heat will increase pressure and may lead to the receptacle bursting.

· **Advice for firefighters**

· **Protective equipment:**

Wear self-contained respiratory protective device.

Wear fully protective suit.

· **Additional information:**

Remove persons from danger area.

Cool endangered receptacles with water spray.

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**

Wear protective clothing.

Avoid formation of dust.

Use respiratory protective device against the effects of fumes/dust/aerosol.

· **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

· **Methods and material for containment and cleaning up:**

Pick up mechanically.

Avoid formation of dust.

Send for recovery or disposal in suitable receptacles.

Clean the affected area carefully; suitable cleaners are:

Water

Dispose of the collected material according to regulations.

· **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

· **Handling:**

· **Precautions for safe handling**

The usual precautionary measures for handling chemicals should be followed.

Wear protective clothing.

Prevent formation of dust.

· **Information about protection against explosions and fires:**

Keep ignition sources away - Do not smoke.

Contact with combustible material may cause fire.

· **Conditions for safe storage, including any incompatibilities**

· **Storage:**

· **Requirements to be met by storerooms and receptacles:**

Store in cool, dry conditions in well sealed receptacles.

· **Information about storage in one common storage facility:**

Do not store together with acids.

Do not store together with alkalis (caustic solutions).

Store away from reducing agents.

Store away from flammable substances.

· **Further information about storage conditions:**

· **Maximum storage temperature:** < 40 °C

· **Recommended storage temperature:** < 30 °C

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- **Specific end use(s)**
Bleaching component of washing and cleaning agents
see section 1.2

8 Exposure controls/personal protection

- **Additional information about design of technical systems:**
Ensure good ventilation/exhaustion at the workplace.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

· **DNELs**

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Oral	LT syst. effects	0.36 mg/kg bw/day (General Population) NOAEL: 648 mg/kg bw/day (based on AF of 1800)
Dermal	LT syst. effects	36 mg/kg bw/day (General Population) LOAEL: 648 mg/kg bw/day (based on AF of 18) 101 mg/kg bw/day (Human (worker)) Assessment factor: 3 x 1 x 6 x 4 x 2,5 x 5 = 900 As for the dermal route 1 % absorption can be assumed, the external DNEL is about 101 mg/kg bw/day.
Inhalative	LT local effects	0.5 mg/m ³ (General Population) NOAEC: 2.0 mg/m ³ (based on AF of 4) 2 mg/m ³ (Human (worker)) Assuming an amount of the respirable fraction in workplace air of about 30 - 50% of the inhalable fraction (ECB, 2007), a DNEL of 2 mg/m ³ can be derived.
	LT syst. effects	0.5 mg/m ³ (General Population) NOAEC: 2,0 mg/m ³ (based on AF of 4) 2 mg/m ³ (Human (worker))

- **PNECs** Not applicable
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
- **Breathing equipment:** Use suitable respiratory protective device when high concentrations are present.
- **Recommended filter device for short term use:**
Filter P2
Filter FFP2
- **Protection of hands:**



Protective gloves

- **Material of gloves**
made out of PVC.
Rubber gloves

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- **Penetration time of glove material** Value for the permeation: Level \geq 480 min. (EN 374)
- **Eye protection:** Gauze goggles
- **Body protection:** Protective work clothing

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form:	Salt Crystalline free-flowing
Color:	White
· Odor:	Odorless
· Odor threshold:	Not applicable

· pH-value (15 g/l) at 20 °C (68 °F):	10
· Melting point/Melting range:	338 K (at 1013 hPa)
· Boiling point/Boiling range:	Not applicable

· Flash point:	Not applicable
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· Flammability (solid, gaseous):	Contact with combustible material may cause fire.
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· Decomposition temperature:	~ 60 °C (~ 140 °F)
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· Auto igniting:	None
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· Danger of explosion:	Not applicable
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· Explosion limits:	
Lower:	Not applicable
Upper:	Not applicable
· Oxidizing properties	yes.

· Vapor pressure:	Not applicable
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· Density at 20 °C (68 °F):	2.12 g/cm ³ (17.691 lbs/gal)
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· Bulk density:	400-650 kg/m ³
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· Solubility in / Miscibility with	
Water at 20 °C (68 °F):	~ 15 g/l
· Other information	Typ. grain size: 95 % > 0.10 mm Active oxygen content: ca. 15 %

10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** Thermal decomposition starts at > 60 °C.
- **Possibility of hazardous reactions**
 - Exothermic thermal decomposition.
 - Reacts with reducing agents.
 - Reacts with alkali (lyes).
 - Reacts with acids.

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- **Conditions to avoid**
Protect from heat and direct sunlight.
Protect from humidity and water.
- **Incompatible materials:**
Metal salts.
Keep away from metals.
Keep away from combustible material.
- **Hazardous decomposition products:** No dangerous decomposition products known.
- **Additional information:**
Stable at ambient temperature.
To avoid thermal decomposition do not overheat.
Contact with combustible material may cause fire.
The product is not flammable.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**

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Oral	LD50	890 mg/kg (Rat (female)) (EPA OPP 81-1 (Acute Oral Toxicity)) Glaza M (1988) 1300 mg/kg (Rat (male)) (EPA OPP 81-1 (Acute Oral Toxicity)) Glaza M (1988)
Dermal	LD50	>2000 mg/kg (Rabbit) (OECD Guideline 402 (Acute Dermal Toxicity)) Cerven DR (1987b)
Inhalative	LC50/4h	1165 mg/m ³ (Rat (male)) (equivalent or similar to OECD Guideline 403) Valentine R (1987)

- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Subacute to chronic toxicity:**
NOEL (oral, Rat): < 1000 mg/kg (28-Day-Study)
Effects/organs affected:
Irritation of gastric mucosa.
Changes of blood parameters.
- **Additional toxicological information:**
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)** Substance is not listed.
- **NTP (National Toxicology Program)** Substance is not listed.
- **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
Repr. 1B

CA

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12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**

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EC50	3.3 mg/l (Pseudokirchneriella subcapitata) (OECD Guideline 201) Solvay Duphar B.V. (1993d)
EC50/48h	11 mg/l (Daphnia magna) (OECD Guideline 202) Solvay Duphar B.V. (1993c)
IC50/96 h	26.8 mg/l (Desmodesmus subspicatus)
LC50/96h	51 mg/l (Danio rerio) (OECD Guideline 203 (Fish, Acute Toxicity Test)) Solvay Duphar B.V. (1993b)
NOEC/48 h	8 mg/l (Daphnia magna)
NOEC/96h	25 mg/l (Danio rerio)

· **Persistence and degradability**

This product is unstable in water. The information concerning the elimination, also refers to the hydrolysis products.

Readily biodegradable

· **Other information:** Abiotic degradation because of hydrolysis and reduction.

· **Behavior in environmental systems:**

· **Bioaccumulative potential**

Not worth-mentioning accumulating in organisms

Due to the ionic nature of sodium perborate and its degradation products a potential for bioaccumulation is not to be expected.

· **Mobility in soil**

None

Sodium perborate has no potential for adsorption onto sediments. It is readily degradable in aqueous media. Therefore, neither direct nor indirect exposure of soil is expected.

· **Additional ecological information:**

· **AOX-indication:** The product does not contain organically bounded halogens (AOX-free).

· **General notes:** Water hazard class 1 (Assessment by list): slightly hazardous for water

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**

· **Recommendation:** Must be specially treated adhering to official regulations.

· **Waste disposal key:** 51540 (ÖNORM S 2100)

· **European waste catalogue**

16 03 03* | inorganic wastes containing dangerous substances

· **Uncleaned packagings:**

· **Recommendation:**

Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

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Disposal must be made according to official regulations.

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14 Transport information

· UN-Number	
· DOT	UN3377
· TDG, IMDG, IATA	3377
· UN proper shipping name	
· DOT	Sodium perborate monohydrate
· TDG	3377 Sodium perborate monohydrate
· IMDG, IATA	SODIUM PERBORATE MONOHYDRATE
· Transport hazard class(es)	
· DOT	
	
· Class	5.1 Oxidizing substances
· Label	5.1
· TDG, IMDG, IATA	
	
· Class	5.1 Oxidizing substances
· Label	5.1
· Packing group	
· DOT, TDG, IMDG, IATA	III
· Environmental hazards:	Not applicable
· Special precautions for user	Warning: Oxidizing substances
· Danger code (Kemler):	50
· EMS Number:	F-A,S-Q
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· UN "Model Regulation":	UN3377, Sodium perborate monohydrate, 5.1, III

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara
- Section 302 (extremely hazardous substances): Substance is not listed.
- Section 313 (Specific toxic chemical listings): Substance is not listed.
- TSCA (Toxic Substances Control Act): Substance is listed.
- Proposition 65
- Chemicals known to cause cancer: Substance is not listed.
- Chemicals known to cause reproductive toxicity for females: Substance is not listed.

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- **Chemicals known to cause reproductive toxicity for males:** Substance is not listed.
- **Chemicals known to cause developmental toxicity:** Substance is not listed.
- **Carcinogenicity categories**
- **EPA (Environmental Protection Agency)** Substance is not listed.
- **TLV (Threshold Limit Value established by ACGIH)** Substance is not listed.
- **MAK (German Maximum Workplace Concentration)** Substance is not listed.
- **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.
- **Canadian substance listings:**
- **Canadian Domestic Substances List (DSL)** Substance is listed.
- **Canadian Ingredient Disclosure list (limit 0.1%)** Substance is not listed.
- **Canadian Ingredient Disclosure list (limit 1%)** Substance is not listed.
- **Philippines Inventory of Chemicals and Chemical Substances** Substance is listed.
- **Chinese Chemical Inventory of Existing Chemical Substances** Substance is listed.
- **Australian Inventory of Chemical Substances** Substance is listed.
- **Standard for the Uniform Scheduling of Drugs and Poisons** Substance is not listed.

· **Existing and New Chemical List (Japan)**

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- **National regulations:**
- **Information about limitation of use:**
Employment restrictions concerning pregnant and lactating women must be observed.
- **Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

16 Other information

- **Department issuing MSDS:**
HSE Department
Chemical Management
- **Date of preparation / last revision** 03/05/2015 / 9
- **Abbreviations and acronyms:**
ICAO: International Civil Aviation Organisation
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
WHMIS: Workplace Hazardous Materials Information System (Canada)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Ox. Sol. 3: Oxidising Solids, Hazard Category 3
Acute Tox. 4: Acute toxicity, Hazard Category 4
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
Repr. 1B: Reproductive toxicity, Hazard Category 1B
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
- *** Data compared to the previous version altered.**