1 Identification

- **Product identifier**
  - **Product name:** Sodium perborate tetrahydrate
  - Sodium Perborate Tetrahydrate Q18
  - **CAS Number:** 10486-00-7
  - **EINECS Number:** 234-390-0
  - **Index number:** 005-018-00-2
  - **REACH-Registration number:** 01-2119516039-43-0002
  - **Application of the substance / the preparation:** Bleaching component of washing and cleaning agents
  - **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:** msdsctg@treibacher.com
    - **Emergency telephone number:**
      - +43 (0) 4262 505-290 / +43 (0) 4262 505-291
      - +43 (0) 664-60505-290
      - CHEMTREC - USA / CA (24-h emergency number): +1 800 424 9300
      - +43 (0) 1 406 43-43-0 (Austrian Poison Information Centre)

2 Hazard(s) identification

- **Classification of the substance or mixture**
  - GHS08 Health hazard
    - Repr. 1B H360 May damage fertility or the unborn child.
  - GHS05 Corrosion
    - Eye Dam. 1 H318 Causes serious eye damage.
  - GHS07
    - 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** GHS05, GHS07, GHS08
  - **Signal word** Danger
  - **Hazard statements**
    - H318 Causes serious eye damage.
    - H360 May damage fertility or the unborn child.
    - H335 May cause respiratory irritation.
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Precautionary statements
P281 Use personal protective equipment as required.
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.

Classification system:
NFPA ratings (scale 0 - 4)

Health = 2
Fire = 0
Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = 2
Fire = 0
Reactivity = 0

Other hazards Not applicable
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Substances

Components:

<table>
<thead>
<tr>
<th>CAS: 10486-00-7</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 234-390-0</td>
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<td>Reg.nr.: 01-2119516039-43-0002</td>
</tr>
<tr>
<td>Sodium perborate tetrahydrate</td>
</tr>
</tbody>
</table>

Repr. 1B, H360; Eye Dam. 1, H318, STOT SE 3, H335 ≥ 96%

Additional information:
Molecular formula: NaB\(\text{O}_3\)\(\cdot\)4\(\text{H}_2\)\(\text{O}\) / NaB\(\text{O}_2\)\(\cdot\)\(\text{H}_2\)\(\text{O}\)\(\cdot\)3\(\text{H}_2\)\(\text{O}\)
Molecular weight: 153.88 g/mol
Further CAS-No.: 11138-47-9
Further EINECS-No.: 234-390-0

4 First-aid measures

Description of first aid measures

General information:
Personal protection for the First Aider.
Seek medical treatment in case of complaints.

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- 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).
  Do not induce vomiting; immediately call for medical help.
- Information for doctor:
  Treat symptomatically.
- Most important symptoms and effects, both acute and delayed
  No further relevant information available.
- 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
  Carbon dioxide

- For safety reasons unsuitable extinguishing agents: Organic media
- Special hazards arising from the substance or mixture
  In case of fire, the following can be released:
  Oxygen

- Advice for firefighters

- Protective equipment:
  Wear self-contained respiratory protective device.
  Wear fully protective suit.

- Additional information:
  Remove persons from danger area.
  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.
  Avoid contact with the eyes and skin.
- 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.
  Sand 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.
7 Handling and storage

- Handling:
  - Precautions for safe handling
    The usual precautionary measures for handling chemicals should be followed.
    Prevent formation of dust.
    Wear protective clothing.
  - Information about protection against explosions and fires: No special measures required.

- 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 alkalis (caustic solutions).
    Do not store together with acids.
    Store away from reducing agents.
  - Further information about storage conditions:
    - Maximum storage temperature: < 40 °C
    - Recommended storage temperature: < 30 °C
    - Specific end use(s): Bleaching component of washing and cleaning agents

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

  10332-33-9 Sodium perborate monohydrate

<table>
<thead>
<tr>
<th>Exposure</th>
<th>LT syst. effects</th>
<th>LOAEL</th>
<th>NOAEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>0.36 mg/kg bw/day (General Population)</td>
<td>648 mg/kg bw/day (based on AF of 1800)</td>
<td>36 mg/kg bw/day (General Population)</td>
</tr>
<tr>
<td>Dermal</td>
<td>36 mg/kg bw/day (General Population)</td>
<td>648 mg/kg bw/day (based on AF of 18)</td>
<td>101 mg/kg bw/day (Human (worker))</td>
</tr>
<tr>
<td>Inhalative</td>
<td>0.5 mg/m³ (General Population)</td>
<td>2 mg/m³ (Human (worker))</td>
<td>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/m³ can be derived.</td>
</tr>
<tr>
<td>LT local effects</td>
<td>0.5 mg/m³ (General Population)</td>
<td>2 mg/m³ (Human (worker))</td>
<td></td>
</tr>
<tr>
<td>LT syst. effects</td>
<td>0.5 mg/m³ (General Population)</td>
<td>2 mg/m³ (based on AF of 4)</td>
<td></td>
</tr>
<tr>
<td>LT syst. effects</td>
<td>2 mg/m³ (Human (worker))</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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- 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.
- Breathing equipment: Use suitable respiratory protective device when high concentrations are present.
- Recommended filter device for short term use:
  Filter P1
  Filter FFP1
- Protection of hands:
  Protective gloves

- Material of gloves
  made out of PVC,
  Rubber gloves
- Penetration time of glove material Value for the permeation: Level ≥ 240 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
- Flammability (solid, gaseous): Product is not flammable.
- Decomposition temperature: ca. 60 °C (ca. 140 °F)
- Auto igniting: None
- Danger of explosion: Product does not present an explosion hazard.
- Explosion limits:
  - Lower: Not applicable
  - Upper: Not applicable
- Oxidizing properties: None
- Vapor pressure: Not applicable
- Density: Not determined.

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(Contd. of page 5)

- **Bulk density:** 700 - 950 kg/m³
- **Solubility in / Miscibility with**
  Water at 20 °C (68 °F): 23 g/l
- **Other information**
  Typ. grain size: 95% > 0.10 mm
  Active oxygen content: ca. 10%

10 Stability and reactivity

- **Reactivity**: No further relevant information available.
- **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 (lye).
    Reacts with acids.
- **Conditions to avoid**
  Protect from heat and direct sunlight.
  Protect from humidity and water.
- **Incompatible materials**: No further relevant information available.
- **Hazardous decomposition products**: No dangerous decomposition products known.
- **Additional information**
  Stable at ambient temperature.
  To avoid thermal decomposition do not overheat.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity**:
  - **LD/LC50 values that are relevant for classification**:
    - Oral LD₅₀: 2567 mg/kg (Rat) (OECD Guideline 401 (Acute Oral Toxicity))
      Mayr W (1987)
      NOEL: < 1000 mg/kg (Rat)
    - Dermal LD₅₀: > 2000 mg/kg (Rabbit) (OECD Guideline 402 (Acute Dermal Toxicity))
      Limit test
      NOAEL fetotoxicity: 100 mg/kg bw/day (Rat (female)) (Prenatal Developmental Toxicity Study (OECD 414))
      Bussi, 1995
      NOAEL maternal toxicity: 100 mg/kg bw/day (Rat (female)) (Prenatal Developmental Toxicity Study (OECD 414))
      Bussi, 1995
- **on the skin**: No irritant effect.
- **on the eye**: Strong irritant with the danger of severe eye injury.
- **Sensitization**: No sensitizing effects known.
- **Subacute to chronic toxicity**:
  NOEL (oral, Rat): < 1000 mg/kg (28-day-Study)
  Effects/organisms affected:
  Irritation of gastric mucosa.

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- 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) May impair fertility.

12 Ecological information
- Toxicity
  - Aquatic toxicity:
    | Parameter | Value |
    |-----------|-------|
    | EC50      | 3.3 mg/l (Pseudokirchneriella subcapitata) (OECD Guideline 201) |
    |           | Solvay Duphar B.V. (1993d) |
    |           | 26.8 mg/l (Desmodesmus subspicatus) |
    | EC50/48h  | 11 mg/l (Daphnia magna) (OECD Guideline 202) |
    |           | Solvay Duphar B.V. (1993c) |
    | LC50/96h  | 51 mg/l (Brachydanio rerio) (OECD Guideline 203 (Fish, Acute Toxicity Test)) |
    |           | Solvay Duphar B.V. (1993b) |
    | NOEC/48h  | 8 mg/l (Daphnia magna) |
    | NOEC/96h  | 25 mg/l (Brachydanio 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: Non significant accumulation in organisms
  - Mobility in soil: No further relevant information available.

- 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.
  Disposal must be made according to official regulations.

- Waste disposal key: 51540 (ÖNORM S 2100)

- European waste catalogue
  16 03 03* Inorganic wastes containing dangerous substances

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## 14 Transport information

- **UN-Number**
  - DOT, ADR,RID,ADN, ADN, IMDG, IATA Void

- **UN proper shipping name**
  - DOT, ADR,RID,ADN, ADN, IMDG, IATA Void

- **Transport hazard class(es)**
  - DOT, ADR,RID,ADN, ADN, IMDG, IATA
  - Class Void

- **Packing group**
  - DOT, ADR,RID,ADN, IMDG, IATA Void

- **Environmental hazards:**
  - Void

- **Special precautions for user**
  - Not applicable.

- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**
  - Not applicable.

- **Transport/Additional information:**
  - Not dangerous according to the above specifications.
  - Protect from heat and direct sunlight.
  - Store in a cool place.

- **UN "Model Regulation":**
  - Void

## 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):**
    - 1333-73-9 | Boric acid, sodium salt
  - **Proposition 65**
    - Chemicals known to cause cancer: Substance is not listed.
    - Chemicals known to cause reproductive toxicity for females: Substance is not listed.
    - Chemicals known to cause reproductive toxicity for males: Substance is not listed.
    - Chemicals known to cause developmental toxicity: Substance is not listed.
    - Cancerseness categories

- **EPA (Environmental Protection Agency)**
  - 10486-00-7 | Sodium perborate tetrahydrate | 1 (oral)
  - **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 not listed.

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- 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)
10486-00-7 Sodium perborate tetrahydrate

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

Relevant phrases
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H360 May damage fertility or the unborn child.

Department issuing SDS:
Health, Safety, Environment and Quality Management
Chemical Management

Date of preparation / last revision 11/30/2015 / 9

Abbreviations and acronyms:
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
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)
HIMS: Hazardous Materials Identification System (USA)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
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.