

Safety Data Sheet

acc. to OSHA HCS

Printing date 06/26/2023

Reviewed on 06/26/2023

1 Identification

- **Product identifier**

- **Trade name:**

- **Article number:** 9038

- **Application of the substance / the mixture** Water treatment

- **Uses advised against**

Processes involving extreme heat use advised against.

Any use involving aerosol formation or vapour release in excess of the assigned WEL where workers are exposed without suitable RPE.

Any use carrying a risk of direct contact with eyes/skin where workers are exposed without adequate personal protective equipment (PPE).

Processes where workers who may be pregnant or breastfeeding could potentially come into direct contact with the undiluted product.

The product is intended exclusively for industrial and professional use.

- **Details of the supplier of the safety data sheet**

- **Manufacturer/Supplier:**

- **Information department:** Product safety department.

- **Emergency telephone number:**

CHEMTREC: 800-424-9300 (Domestic North America) OR 703-527-3887 (International, collect calls accepted).

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS03 Flame over circle

Oxidizing Solids 3

H272 May intensify fire; oxidizer.



GHS06 Skull and crossbones

Acute Toxicity - Oral 3

H301 Toxic if swallowed.



GHS08 Health hazard

Toxic to Reproduction 1B H360 May damage fertility or the unborn child.



GHS07

Eye Irritation 2A

H319 Causes serious eye irritation.

- **Label elements**

- **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms** GHS03, GHS06, GHS07, GHS08

- **Signal word** Danger

- **Hazard-determining components of labeling:**

Sodium nitrite

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Disodium tetraborate, decahydrate
Tetrasodium (1-hydroxyethylidene)bisphosphonate
Triazole derivative, neutralised*

- **Hazard statements**

May intensify fire; oxidizer.
Toxic if swallowed.
Causes serious eye irritation.
May damage fertility or the unborn child.

- **Precautionary statements**

Take any precaution to avoid mixing with combustibles.
Do not eat, drink or smoke when using this product.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Immediately call a poison center/doctor.
Rinse mouth.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
If exposed or concerned: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
In case of fire: Use CO₂, powder or water spray to extinguish.
Collect spillage.

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



Health = 2
Fire = 0
Reactivity = 0

The substance possesses oxidizing properties.

- **HMIS-ratings (scale 0 - 4)**



Health = *2
Fire = 0
Reactivity = 0

- **Other hazards**

- **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.
· **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**

· **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

7632-00-0	Sodium nitrite	50–100%
3794-83-0	Tetrasodium (1-hydroxyethylidene)bisphosphonate	10–25%
1303-96-4	Disodium tetraborate, decahydrate	2.5–<10%
	Triazole derivative, neutralised*	0.1–1%

· **Additional information:** *Equilibrium of Ionic pairs.

4 First-aid measures

- **Description of first aid measures**

- **General information:**

Immediately remove any clothing soiled by the product.
In case of irregular breathing or respiratory arrest provide artificial respiration.

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

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- **After skin contact:**
Immediately rinse with water.
If skin irritation continues, consult a doctor.
- **After eye contact:**
Check for and remove any contact lenses.
Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; call for medical help immediately.
If vomiting occurs spontaneously, keep head below hips to prevent aspiration.
- **Information for doctor:**
Nitrites may cause effects on the blood, resulting in formation of methaemoglobin when ingested. The effects may be delayed. Medical observation is indicated.
- **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
- **For safety reasons unsuitable extinguishing agents:**
Foam
Extinguishing powder
- **Special hazards arising from the substance or mixture**
Strong oxidiser. Contact with combustible or flammable substances may cause fire.
Many reactions may cause fire or explosion.
During heating or in case of fire poisonous gases are produced.
Not combustible but enhances combustion of other substances.
- **Advice for firefighters**
- **Protective equipment:**
Do not inhale explosion gases or combustion gases.
Wear self-contained respiratory protective device.
Wear fully protective suit.
- **Additional information**
Cool endangered receptacles with water spray.
Collect contaminated fire fighting water separately. It must not enter the sewage system.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Avoid formation of dust.
Ensure adequate ventilation
- **Environmental precautions:**
Do not allow to penetrate the ground/soil.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Pick up mechanically.
Send for recovery or disposal in suitable receptacles.
Do not use combustible materials such as paper towels to clean up spills.
- **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.
- **Protective Action Criteria for Chemicals**

- **PAC-1:**

7632-00-0	Sodium nitrite	6.4 mg/m ³
1303-96-4	Disodium tetraborate, decahydrate	6 mg/m ³

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· PAC-2:		
7632-00-0	Sodium nitrite	71 mg/m ³
1303-96-4	Disodium tetraborate, decahydrate	190 mg/m ³
· PAC-3:		
7632-00-0	Sodium nitrite	240 mg/m ³
1303-96-4	Disodium tetraborate, decahydrate	1,100 mg/m ³

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Prevent formation of dust.
Ensure good ventilation/exhaustion at the workplace.
Avoid direct contact (skin/eye contact, ingestion and/or inhalation of fume/mist/dust) with the product in the undiluted form.
Safety showers and eye wash facilities should be available at the work area.
Rinse contaminated clothing with plenty of water (Fire hazard)
- **Information about protection against explosions and fires:**
Potentially explosive when mixed with organic substances.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Unsuitable material for receptacle: aluminium.
Do not store on combustible materials such as wooden floors or wooden pallets.
Prevent any seepage into the ground.
Do not store in aluminium or galvanised containers.
- **Information about storage in one common storage facility:**
Store away from ammonium salts.
Store away from flammable substances.
Do not store together with acids.
Store away from combustible materials.
Store away from reducing agents.
- **Further information about storage conditions:**
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.
- **Storage class:** 5.1 B
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see section 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.

1303-96-4 Disodium tetraborate, decahydrate	
REL	Long-term value: 5 mg/m ³
TLV	Short-term value: 6* mg/m ³ Long-term value: 2* mg/m ³ *as inhalable fraction, A4

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
Select PPE appropriate for the operations taking place taking into account the product properties.

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- **General protective and hygienic measures:**

Contaminated clothes are a fire hazard. Rinse with plenty of water.

Take note of assigned Workplace Exposure Limits.

Do not breathe dust

Do not eat, drink, smoke or sniff while working.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Pregnant women should strictly avoid inhalation or skin contact.

A safe system of work must be formulated and followed to ensure safe working with this product. Relevant workers must receive suitable and sufficient training and supervision.

- **Breathing equipment:** Use suitable respiratory protective device in case of insufficient ventilation.

- **Protection of hands:**



Protective gloves conforming to EN374.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Safety glasses with side-shields conforming to EN166.

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Goggles recommended during refilling.

- **Body protection:**



Impervious protective clothing

Body protection must be chosen depending on product properties, activity and possible exposure.

9 Physical and chemical properties

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

- **General Information**

- **Appearance:**

Form: Solid

Color: Whitish

- **Odor:** Mild

- **Odor threshold:** Not determined.

- **pH-value at 20 °C (68 °F):** 11.5 (1%)

- **Change in condition**

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: Undetermined.

- **Flash point:** Not applicable.

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· Flammability (solid, gaseous):	Not determined.
· Decomposition temperature:	Not determined.
· Ignition temperature:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapor pressure:	Not applicable.
· Density:	Not determined.
· Relative density	Not determined.
· Vapor density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with Water:	Soluble.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
· Other information	NOTE: The physical data presented above are typical values and should not be construed as a specification.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions**
Acts as an oxidizing agent on organic materials such as wood, paper and fats.
May explode on heating above 320°C.
Reacts with amines.
Risk of explosion on contact with combustible substances or incompatible substances.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
Strong acids.
Reducing agents
Combustible materials.
Organic solvents.
Flammable materials
Ammonium salts.
Amines.
- **Hazardous decomposition products:**
Carbon monoxide and carbon dioxide
Nitrogen oxides (NO_x)
Boron compounds

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11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

· LD/LC50 values that are relevant for classification:		
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ATE (Acute Toxicity Estimate)		
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Oral	LD50	253 mg/kg
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7632-00-0 Sodium nitrite		
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Oral	LD50	180 mg/kg (rat)
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- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Toxic
Harmful
Irritant
ROUTES OF EXPOSURE: Can be absorbed into the body by inhalation and by ingestion.
Contains sodium nitrite.
May cause nausea, headache, dizziness, weakness and shortness of breath. In severe cases methaemoglobinaemia and a lowering of blood pressure may occur and could prove fatal.
Symptoms may include a greyish-blue discoloration of the skin and mucous membranes, rapid shallow breathing, lowered blood pressure and increased heart rate. Exposure may result in death. The effects may be delayed. Medical observation is indicated.

- **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)
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None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)
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None of the ingredients is listed.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** The organic portion of the product is biodegradable.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** Product is not expected to bioaccumulate.
- **Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Very toxic for fish
- **Additional ecological information:**
- **General notes:**
Very toxic for aquatic organisms
Water hazard class 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

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

13 Disposal considerations

· **Waste treatment methods**

· **Recommendation:**

Recommended Hierarchy of Controls:

- Minimize waste;
- Reuse if not contaminated;
- Recycle, if possible; or
- Safe disposal (if all else fails).

Must not be disposed of together with household garbage. Do not allow product to reach sewage system. Contact waste processors for recycling information.

Used, degraded or contaminated product may be classified as hazardous waste. Anyone classifying hazardous waste and determining its fate must be qualified in accordance with state and international legislation.

· **Uncleaned packagings:**

· **Recommendation:**

Container remains hazardous when empty. Continue to observe all precautions.

Containers, even those that are "empty," may contain residues that can develop hazardous gases and vapours upon heating. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers.

Do not mix with other waste streams.

Disposal must be made according to official regulations.

· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· **UN-Number**

· **DOT, ADR/RID/ADN, IMDG, IATA** UN1500

· **UN proper shipping name**

· **DOT**

Sodium nitrite mixture

· **ADR/RID/ADN**

UN1500 SODIUM NITRITE mixture,
ENVIRONMENTALLY HAZARDOUS

· **IMDG**

SODIUM NITRITE mixture, MARINE POLLUTANT

· **IATA**

SODIUM NITRITE mixture

· **Transport hazard class(es)**

· **DOT**



· **Class**

5.1 Oxidizing substances

· **Label**

5.1, 6.1

· **ADR/RID/ADN**



· **Class**

5.1 Oxidizing substances

· **Label**

5.1+6.1

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· **IMDG**

- **Class** 5.1 Oxidizing substances
- **Label** 5.1/6.1

· **IATA**

- **Class** 5.1 Oxidizing substances
- **Label** 5.1 (6.1)

- **Packing group** III
- **DOT, ADR/RID/ADN, IMDG, IATA** III

- **Environmental hazards:** Product contains environmentally hazardous substances: Sodium nitrite
- **Marine pollutant:** Yes (DOT)
Symbol (fish and tree)
- **Special marking (ADR/RID/ADN):** Symbol (fish and tree)

- **Special precautions for user** Warning: Oxidizing substances
- **Hazard identification number (Kemler code):** 56
- **EMS Number:** F-A,S-Q
- **Segregation groups** (SGG12) Nitrites and their mixtures
- **Stowage Category** A
- **Segregation Code** SG38 Stow "separated from" SGG2-ammonium compounds.
SG49 Stow "separated from" SGG6-cyanides

- **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.
- **DOT**
- **Remarks:** Special marking with the symbol (fish and tree).

- **ADR/RID/ADN**
- **Excepted quantities (EQ)** Code: E1
Maximum net quantity per inner packaging: 30 g
Maximum net quantity per outer packaging: 1000 g

- **IMDG**
- **Limited quantities (LQ)** 5 kg
- **Excepted quantities (EQ)** Code: E1
Maximum net quantity per inner packaging: 30 g
Maximum net quantity per outer packaging: 1000 g

- **UN "Model Regulation":** UN 1500 SODIUM NITRITE MIXTURE, 5.1 (6.1), III, ENVIRONMENTALLY HAZARDOUS

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.

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· **Sara**· **Section 355 (extremely hazardous substances):**

None of the ingredient is listed.

· **Section 313 (Specific toxic chemical listings):**

7632-00-0 Sodium nitrite

· **TSCA (Toxic Substances Control Act):**

All components have the value ACTIVE.

· **Hazardous Air Pollutants**

None of the ingredients is listed.

· **Proposition 65**· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenicity categories**· **EPA (Environmental Protection Agency)**

1303-96-4 Disodium tetraborate, decahydrate

I (oral)

· **TLV (Threshold Limit Value)**

1303-96-4 Disodium tetraborate, decahydrate

A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms** GHS03, GHS06, GHS07, GHS08· **Signal word** Danger· **Hazard-determining components of labeling:**

Sodium nitrite

Disodium tetraborate, decahydrate

Tetrasodium (1-hydroxyethylidene)bisphosphonate

Triazole derivative, neutralised*

· **Hazard statements**

May intensify fire; oxidizer.

Toxic if swallowed.

Causes serious eye irritation.

May damage fertility or the unborn child.

· **Precautionary statements**

Take any precaution to avoid mixing with combustibles.

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

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

If swallowed: Immediately call a poison center/doctor.

Rinse mouth.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

IF exposed or concerned: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

In case of fire: Use CO2, powder or water spray to extinguish.

Collect spillage.

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· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Contact:**

· **Date of preparation / last revision** 06/26/2023

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international 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

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)

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

Oxidizing Solids 3: Oxidizing solids – Category 3

Acute Toxicity - Oral 3: Acute toxicity – Category 3

Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A

Toxic to Reproduction 1B: Reproductive toxicity – Category 1B