

Safety data sheet

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BASF Safety data sheet according to Regulation (EC) No. 1907/2006

Date / Revised: 13.06.2013 Version: 9.0

Product: Sodium Nitrite HQ free flowing (non-food grade)

(ID no. 30046436/SDS_GEN_EU/EN)

Date of print 15.06.2013

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Sodium Nitrite HQ free flowing (non-food grade)

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: Chemical

Recommended use: Raw material, Intermediate, corrosion inhibitor, Surface treatment agent

For the detailed identified uses of the product see appendix of the safety data sheet.

1.3. Details of the supplier of the safety data sheet

Company:
BASF SE
67056 Ludwigshafen
GERMANY

Telephone: +49 621 60-0

E-mail address: global.info@basf.com

1.4. Emergency telephone number

International emergency number: Telephone: +49 180 2273-112

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

According to Regulation (EC) No 1272/2008 [CLP]

Ox. Sol. 3

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Acute Tox. 3 (oral) Eye Dam./Irrit. 2 Aquatic Acute 1

According to BASF current knowledge and application of the criteria given in Annex I of Regulation (EC) No. 1272/2008, the following classification exceeding the classification given in Regulation (EC) No 1272/2008, Annex VI, Table 3.1 is required.

Ox. Sol. 2 Acute Tox. 3 (oral) Eye Dam./Irrit. 2 Aquatic Acute 1

According to Directive 67/548/EEC or 1999/45/EC

Possible Hazards:

Toxic if swallowed.

Contact with combustible material may cause fire.

Very toxic to aquatic organisms.

For the classifications not written out in full in this section the full text can be found in section 16.

2.2. Label elements

Globally Harmonized System, EU (GHS)

Pictogram:



Signal Word: Danger

Hazard Statement:

H319 Causes serious eye irritation.

H301 Toxic if swallowed.
H400 Very toxic to aquatic life.
H272 May intensify fire; oxidizer.

Precautionary Statements (Prevention):

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P273 Avoid release to the environment.

P280f + P283 Wear protective gloves and eye/face protection and fire/flame

resistant/retardant clothing.

P280d Wear eye/face protection.

P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

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

P264 Wash with plenty of water and soap thoroughly after handling.
P221 Take any precaution to avoid mixing with combustibles ...
P220 Keep/Store away from clothing/combustible materials.

Precautionary Statements (Response):

P310 Immediately call a POISON CENTER or doctor/physician.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove

contact lenses, if present and easy to do. Continue rinsing.

P301 + P330 IF SWALLOWED: rinse mouth.

P391 Collect spillage.

P337 + P311 If eye irritation persists: Call a POISON CENTER or doctor/physician.

P370 + P378.4 In case of fire: Use water spray for extinction.

Precautionary Statements (Storage):
P405 Store locked up.

P420 Store aways from other materials.

Precautionary Statements (Disposal):

P501 Dispose of contents/container to hazardous or special waste collection

point.

According to Regulation (EC) No 1272/2008 [CLP]

Hazard determining component(s) for labelling: SODIUM NITRITE

According to Directive 67/548/EEC or 1999/45/EC

Regulation 1272/2008/EC on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation 1907/2006/EC

Hazard symbol(s)

O Oxidizing.

T Toxic.

N Dangerous for the environment.



R-phrase(s)

R8 Contact with combustible material may cause fire.

R25 Toxic if swallowed.

R50 Very toxic to aquatic organisms.

S-phrase(s)

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S45 In case of accident or if you feel unwell, seek medical advice

immediately (show the label where possible).

S61 Avoid release to the environment. Refer to special instructions/safety

data sheets.

Hazard determining component(s) for labelling: SODIUM NITRITE

2.3. Other hazards

According to Regulation (EC) No 1272/2008 [CLP]

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

No specific dangers known, if the regulations/notes for storage and handling are considered.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Chemical nature

sodium nitrite NaNO2

Contains: anticaking agent

Hazardous ingredients (GHS)

according to Regulation (EC) No. 1272/2008

sodium nitrite

CAS Number: 7632-00-0 EC-Number: 231-555-9 REACH registration number: 01-

2119471836-27

INDEX-Number: 007-010-00-4

Ox. Sol. 3
Acute Tox. 3 (oral)
Eye Dam./Irrit. 2
Aquatic Acute 1
M-factor acute: 1

H272, H319, H301, H400

<u>Hazardous ingredients</u> according to Directive 1999/45/EC

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sodium nitrite

Content (W/W): >= 99 % CAS Number: 7632-00-0 EC-Number: 231-555-9

REACH registration number: 01-2119471836-27

INDEX-Number: 007-010-00-4 Hazard symbol(s): O, T, N R-phrase(s): 8, 25, 50

For the classifications not written out in full in this section, including the indication of danger, the hazard symbols, the R phrases, and the hazard statements, the full text is listed in section 16.

SECTION 4: First-Aid Measures

4.1. Description of first aid measures

If danger of loss of consciousness, place patient in recovery position and transport accordingly. Apply artificial respiration if necessary.

If inhaled:

After inhalation of decomposition products, remove the affected person to a source of fresh air and keep calm. Provide medical aid. Immediately inhale corticosteroid dose aerosol.

On skin contact:

Wash thoroughly with soap and water.

On contact with eyes:

Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:

Rinse mouth immediately and then drink plenty of water, induce vomiting, seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms: Overexposure may cause:, vomiting, convulsions, cyanosis, death, coma, methaemoglobinaemia, nausea

Hazards: Risk of pulmonary edema. Symptoms can appear later. Danger of methaemoglobin formation after ingestion.

4.3. Indication of any immediate medical attention and special treatment needed

Treatment: Treat according to symptoms (decontamination, vital functions), treat with toluonium chloride to reverse methaemoglobinanaemia.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media

Suitable extinguishing media:

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water spray

Unsuitable extinguishing media for safety reasons:

ABC powder, carbon dioxide

5.2. Special hazards arising from the substance or mixture

nitrogen oxides

The substances/groups of substances mentioned can be released in case of fire. Has a fire-promoting effect due to release of oxygen.

5.3. Advice for fire-fighters

Special protective equipment:

Wear a self-contained breathing apparatus.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Use breathing apparatus if exposed to vapours/dust/aerosol. Avoid contact with eyes.

6.2. Environmental precautions

Do not discharge into the subsoil/soil. Do not discharge into waterways or sewer systems without proper authorization.

6.3. Methods and material for containment and cleaning up

For residues: Pick up with suitable appliance and dispose of.

6.4. Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

Keep container tightly sealed. Breathing must be protected when large quantities are decanted without local exhaust ventilation. Processing machines must be fitted with local exhaust ventilation. Protect against moisture. Protect against heat. Do not mix with combustible substances. Handle in accordance with good industrial hygiene and safety practice.

Protection against fire and explosion:

The substance/product is non-combustible. Has a fire-promoting effect due to release of oxygen. Where required Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy.

7.2. Conditions for safe storage, including any incompatibilities

Segregate from oxidizable substances. Segregate from acids. Segregate from ammonium salts. Further information on storage conditions: Keep container tightly closed and in a well-ventilated place. This product is classified as a dangerous substance for storage. The authority permits and storage regulations must be observed. Keep away from food, drink and animal feeding stuffs.

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7.3. Specific end use(s)

See exposure scenario(s) in the attachment to this safety data sheet.

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Components with occupational exposure limits

7632-00-0: sodium nitrite 7631-99-4: Sodium nitrate

PNEC

freshwater: 0.0054 mg/l

marine water: 0.00616 mg/l

intermittent release: 0.0054 mg/l

sediment (freshwater): 0.0195 mg/kg

sediment (marine water): 0.0223 mg/kg

soil: 0.000733 mg/kg

STP: 21 mg/l

<u>DNEL</u>

worker:

Long- and short-term exposure - systemic effects, Inhalation: 2 mg/m3

8.2. Exposure controls

Personal protective equipment

Respiratory protection:

Breathing protection if dusts are formed. Particle filter with high efficiency for solid and liquid particles (e.g. EN 143 or 149, Type P3 or FFP3).

Hand protection:

Chemical resistant protective gloves (EN 374)

Suitable materials also with prolonged, direct contact (Recommended: Protective index 6,

corresponding > 480 minutes of permeation time according to EN 374):

polyvinylchloride (PVC) - 0.7 mm coating thickness

nitrile rubber (NBR) - 0.4 mm coating thickness

chloroprene rubber (CR) - 0.5 mm coating thickness

butyl rubber (butyl) - 0.7 mm coating thickness

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fluoroelastomer (FKM) - 0.7 mm coating thickness

Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing. Manufacturer's directions for use should be observed because of great diversity of types.

Eye protection:

Safety glasses with side-shields (frame goggles) (e.g. EN 166)

General safety and hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Do not breathe dust. Keep away from food, drink and animal feeding stuffs. No eating, drinking, smoking or tobacco use at the place of work. Take off immediately all contaminated clothing. Hands and/or face should be washed before breaks and at the end of the shift.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Form: crystalline

Colour: white to slightly yellow

Odour: faint odour pH value: 8 - 9

(100 g/l, 20 °C)

Melting point: 280 °C

Boiling point:

The substance / product decomposes therefore not

determined.

Flammability: not flammable Density: 2.17 g/cm3

2.17 g/cm3 (ISO 2811-3)

(20 °Č)

Relative density: 2.17

(20 °C)

Literature data.

Solubility in water: readily soluble

Partitioning coefficient n-octanol/water (log Kow):

Study scientifically not justified.

Self ignition: not self-igniting

Thermal decomposition: > 320 °C

Nitrogen monoxide, nitrogen dioxide, Disodium oxide

Viscosity, dynamic:

Study scientifically not justified.

Fire promoting properties: Oxidizing.

9.2. Other information

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Radioactivity:

not radioactive for transport

purposes

Bulk density: 1,100 - 1,300 kg/m3

pKA:

Study scientifically not justified.

Hygroscopic hygroscopic

Surface tension:

Based on chemical structure, surface

activity is not to be expected.

SECTION 10: Stability and Reactivity

10.1. Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

10.2. Chemical stability

The product is chemically stable.

10.3. Possibility of hazardous reactions

Hazardous reactions in presence of mentioned substances to avoid.

10.4. Conditions to avoid

See MSDS section 7 - Handling and storage.

10.5. Incompatible materials

Substances to avoid:

reducing agents, oxidizable substances, ammonium salts, amines, amine compounds, acids

10.6. Hazardous decomposition products

Hazardous decomposition products:

Disodium oxide

nitrogen oxides

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:

Of high toxicity after single ingestion. There is a risk of damage to the blood (methemoglobinemia) after a single uptake.

Experimental/calculated data:

LD50 rat (oral): 180 mg/kg

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(by inhalation): Study scientifically not justified.

(dermal):Study scientifically not justified.

Irritation

Assessment of irritating effects:

Not irritating to the skin. Eye contact causes irritation.

Experimental/calculated data:

Skin corrosion/irritation rabbit: non-irritant (OECD Guideline 404)

Serious eye damage/irritation rabbit: Irritant. (OECD Guideline 405)

Respiratory/Skin sensitization

Assessment of sensitization:

There is no evidence of a skin-sensitizing potential.

Experimental/calculated data:

Study scientifically not justified.

Germ cell mutagenicity

Information on: sodium nitrite Assessment of mutagenicity:

The data available on mutagenic action are not consistent.

Carcinogenicity

Assessment of carcinogenicity:

In long-term studies in rats and mice in which the substance was given by drinking-water, a carcinogenic effect was not observed. Under certain conditions nitrites can enhance the formation of nitrosamines in vivo. Nitrosamines are carcinogenic in animal studies.

Reproductive toxicity

Assessment of reproduction toxicity:

The results of animal studies gave no indication of a fertility impairing effect.

Developmental toxicity

Assessment of teratogenicity:

In animal studies the substance did not cause malformations. Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals. After the uptake of small doses toxicity to development will not be expected in humans.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

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Assessment of repeated dose toxicity:

After repeated administration the prominent effect is damage of the blood (methemoglobin formation).

Aspiration hazard

No aspiration hazard expected.

SECTION 12: Ecological Information

12.1. Toxicity

Assessment of aquatic toxicity:

Very toxic (acute effect) to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish:

LC50 (96 h) 0.54 - 26.3 mg/l, Salmo gairdneri, syn. O. mykiss (Flow through.)

Aquatic invertebrates:

LC50 (96 h) 4.93 mg/l, aquatic crustacea (static)

Literature data.

EC50 (48 h) 15.4 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)

The statement of the toxic effect relates to the analytically determined concentration.

Aquatic plants:

EC50 (72 h) > 100 mg/l (growth rate), Scenedesmus subspicatus (OECD Guideline 201, static)

The statement of the toxic effect relates to the analytically determined concentration.

Microorganisms/Effect on activated sludge:

EC10 (3 h) 210 mg/l, activated sludge, domestic (OECD Guideline 209, static)

The details of the toxic effect relate to the nominal concentration.

EC50 (48 h) 421 mg/l, protozoa (other, static)

Chronic toxicity to fish:

No observed effect concentration (31 d) 6.16 mg/l, Ictalurus punctatus, syn: I. robustus (Flow through.)

Chronic toxicity to aquatic invertebrates:

No observed effect concentration (80 d) 9.86 mg/l, aquatic crustacea (Daphnia test chronic, static)

Assessment of terrestrial toxicity:

Study scientifically not justified.

12.2. Persistence and degradability

Assessment biodegradation and elimination (H2O):

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Inorganic product which cannot be eliminated from water by biological purification processes. Can be oxidized to nitrate, or be reduced to nitrogen, by microorganisms.

Assessment of stability in water: Study technically not feasible.

12.3. Bioaccumulative potential

Assessment bioaccumulation potential: Accumulation in organisms is not to be expected.

12.4. Mobility in soil

Assessment transport between environmental compartments: Adsorption to solid soil phase is not expected.

12.5. Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative). Self classification

12.6. Other adverse effects

The substance is not listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

12.7. Additional information

Other ecotoxicological advice:

Do not allow to enter soil, waterways or waste water channels. Do not release untreated into natural waters. Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations.

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Contact manufacturer regarding recycling. Check for possible recycling. Contact waste centre regarding recycling.

Contaminated packaging:

Contaminated packaging should be emptied as far as possible and disposed of in accordance with official regulations after being thoroughly cleaned.

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SECTION 14: Transport Information

Land transport

ADR

UN number UN1500

UN proper shipping name: SODIUM NITRITE Transport hazard class(es): 5.1, 6.1, EHSM

Packing group: III Environmental hazards: yes

Special precautions for Tunnel code: E

user:

RID

UN number UN1500

UN proper shipping name: SODIUM NITRITE Transport hazard class(es): 5.1, 6.1, EHSM

Packing group: III Environmental hazards: yes

Special precautions for None known

user:

Inland waterway transport

ADN

UN number UN1500

UN proper shipping name: SODIUM NITRITE Transport hazard class(es): 5.1, 6.1, EHSM

Packing group: III Environmental hazards: ves

Special precautions for None known

user:

Transport in inland Not evaluated

waterway vessel:

Sea transport

IMDG

UN number: UN 1500

UN proper shipping name: SODIUM NITRITE Transport hazard class(es): 5.1, 6.1, EHSM

Packing group: III Environmental hazards: yes

Marine pollutant: YES

Special precautions for None known

user:

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Air transport

IATA/ICAO

UN number: UN 1500

UN proper shipping name: SODIUM NITRITE

Transport hazard class(es): 5.1, 6.1 Packing group: III

Environmental hazards: No Mark as dangerous for the environment is needed

Special precautions for None known

user:

14.1. UN number

See corresponding entries for "UN number" for the respective regulations in the tables above.

14.2. UN proper shipping name

See corresponding entries for "UN proper shipping name" for the respective regulations in the tables above.

14.3. Transport hazard class(es)

See corresponding entries for "Transport hazard class(es)" for the respective regulations in the tables above.

14.4. Packing group

See corresponding entries for "Packing group" for the respective regulations in the tables above.

14.5. Environmental hazards

See corresponding entries for "Environmental hazards" for the respective regulations in the tables above.

14.6. Special precautions for user

See corresponding entries for "Special precautions for user" for the respective regulations in the tables above.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Regulation: Not evaluated Shipment approved: Not evaluated Pollution name: Not evaluated Pollution category: Not evaluated Ship Type: Not evaluated

SECTION 15: Regulatory Information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

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If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

15.2. Chemical Safety Assessment

Chemical Safety Assessment performed

SECTION 16: Other Information

Assessment of the hazard classes according to UN GHS criteria (most recent version):

Ox. Sol. 2

Acute Tox. 3 (oral) Eye Dam./Irrit. 2A Aquatic Acute 1

This product is of industrial quality and unless otherwise specified or agreed intended exclusively for industrial use. Any other intended applications should be discussed with the manufacturer.

Full text of the classifications, including the indication of danger, the hazard symbols, the R phrases, and the hazard statements, if mentioned in section 2 or 3:

O Oxidizing. Toxic.

N Dangerous for the environment.

8 Contact with combustible material may cause fire.

25 Toxic if swallowed.

Very toxic to aquatic organisms.

Ox. Sol. Oxidising solid Acute Tox. Acute toxicity

Eye Dam./Irrit. Serious eye damage/eye irritation

Aguatic Acute Hazardous to the aquatic environment - acute

H272 May intensify fire; oxidizer. H319 Causes serious eye irritation.

H301 Toxic if swallowed.
H400 Very toxic to aquatic life.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. The data do not describe the product's properties (product specification). Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

Vertical lines in the left hand margin indicate an amendment from the previous version.