

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

Product Identifier:

Chemical Name (EINECS): Disodium Metasilicate
Trade Names: Metso 510, Metso 520
Synonyms: Sodium metasilicate pentahydrate; Metso penta
CAS Number: 10213-79-3
EINECS Number: 2299129
REACH Registration Number: 01-2119449811-37-XXXX

Relevant identified uses of the substance or mixture and uses advised against:

Identified use(s): General purpose industrial chemical for use in a wide range of applications. Complexing agent; Corrosion inhibitor; Flame retardant or fire preventing agent; Flotation agent; pH Regulating agent; Viscosity control agent. See also Annex to the extended Safety Data Sheet (eSDS).

Uses advised against: None known.

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2. HAZARDS IDENTIFICATION

Classification of the substance or mixture:

Regulation (EC) No. 1272/2008 (CLP):

Met. Corr. 1: May be corrosive to metals.
Skin Corr. 1B: Causes severe skin burns and eye damage.
Eye Dam. 1: Causes serious eye damage.
STOT SE 3: May cause respiratory irritation.

Label elements:

According to Regulation (EC) No. 1272/2008 (CLP):

Hazard Pictogram(s):



Signal word(s): Danger.

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Hazard statement(s):	H290: May be corrosive to metals. H314: Causes severe skin burns and eye damage. H335: May cause respiratory irritation.
Precautionary statement(s):	P261: Avoid breathing dust. P262: Do not get in eyes, on skin, or on clothing. P280: Wear protective gloves/protective clothing/eye protection/face protection. P301 + P330 + P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting. P303 + P361 + P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Other hazards:	None known. Not classified as PBT or vPvB. Does not cause endocrine disruption.

3. COMPOSITION / INFORMATION ON INGREDIENTS

EC Classification No. 1272/2008:

Ingredient(s)	% W/W	CAS No.	EINECS No./REACH Registration No.	Hazard symbol(s) and Hazard statement(s)
Disodium metasilicate	100	10213-79-3	2299129 01-2119449811-37-XXXX	H290: Met. Corr. 1 H314: Skin Corr. 1B H318: Eye Dam. 1 H335: STOT SE3

Contains no non-classified vPvB substances or substances with a Union workplace exposure limit.

For full text of H/P Statements see section 16.

4. FIRST AID MEASURES (SYMPTOMS)

Description of first aid measures:

Eye contact:	Irrigate with eyewash solution or clean water, holding the eyelids apart, for at least 15 minutes. Obtain immediate medical attention.
Skin Contact:	Was affected skin with plenty of water. Obtain medical attention.
Inhalation:	Remove patient from exposure, keep warm and at rest. Obtain immediate medical attention.
Ingestion:	Do not induce vomiting. Wash out mouth with water and give 200-300 ml (half a pint) of water to drink. Obtain immediate medical attention.

Most important symptoms and effects, both acute and delayed:

Alkaline. Causes burns. Irritating to respiratory system. May cause permanent damage to eyes.

Indication of any immediate medical attention and special treatment needed:

Obtain immediate medical attention.

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5. FIRE-FIGHTING MEASURES

Extinguishing Media:

Suitable Extinguishing Media: Compatible with all standard fire-fighting techniques.

Unsuitable Extinguishing Media: None known.

Special hazards arising from the substance or mixture: Not applicable. Inorganic powder or granules. Non-combustible.

Advice for fire-fighters: None.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Wear suitable protective clothing. Wear eye/face protection. An approved dust mask should be worn if dust is generated during handling.

Environmental precautions: Do not allow to enter drains, sewers or watercourses. Advise Authorities if spillage has entered water course or sewer or has contaminated soil or vegetation.

Methods and material for containment and cleaning up: Caution – spillages may be slippery. Avoid generation of dust. Sweep or preferably vacuum up and collect in suitable containers for recovery or disposal.

Reference to other sections: See also Section 8.

7. HANDLING AND STORAGE

Precautions for safe handling: Avoid contact with eyes, skin and clothing. Avoid generation of dust. Emergency shower and eye wash facilities should be readily available. See also Section 8.

Conditions for safe storage, including any incompatibilities:

Requirements for storage: Keep container tightly closed and dry.

Unsuitable containers: Aluminium. See also Section 10.

Specific end use(s): None known.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters:

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Occupational Exposure Limits

No Occupational Exposure Limit assigned.

An exposure limit of 2 mg/m³ (15 min TWA) is recommended by analogy with sodium hydroxide.

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Derived No Effect Level (DNEL)	Oral/mg/kg bw/d	Inhalation/mg/m3	Dermal/mg/kg bw/d
Workers – Acute – Systemic effects	-	-	-
Workers – Acute – Local effects	-	-	-
Workers – Long Term – Systemic effects	-	6.22	1.49
Workers – Long Term – Local effects	-	-	-
Consumers – Acute – Systemic effects	-	-	-
Consumers – Acute – Local effects	-	-	-
Consumers – Long Term – Systemic effects	0.74	1.55	0.74
Consumers – Long Term – Local effects	-	-	-

For further details and guidance see Exposure Scenarios in Annex to the extended Safety Data Sheet (eSDS). Risk management measures (RMMs) for identified uses must be implemented as described in the SDS and in the relevant exposure scenarios.

Predicted No Effect Concentrations (PNEC):

PNEC water (freshwater) = 7.5 mg/l

PNEC water (marine water) = 1 mg/l

PNEC water(intermittent) = 7.5 mg/l

PNEC sediment = Not available

PNEC soil = Not available

PNECSTP = 1000 mg/l

PNEC Secondary Poisoning (oral) = Not applicable

Exposure controls:

Engineering controls:

Wear protective equipment to comply with good occupational hygiene practice. Do not eat, drink or smoke at the workplace. Engineering methods to prevent or control exposure are preferred. Methods include process or personnel enclosure, mechanical ventilation (dilution and local exhaust), and control of process conditions.

Personal Protection:

Respiratory protection:

Avoid inhalation of dusts. Wear suitable respiratory protective equipment if working in confined spaces with inadequate ventilation or where there is any risk of the exposure limits being exceeded. Advice on respiratory protective equipment is given in the HSE (Health and Safety Executive) publication HS (G) 53.

Eye/face protection:

Chemical goggles.

Skin protection:

Wear suitable protective clothing and gloves. PVC or rubber gloves. For example, EN374-3. Wear suitable overalls.

Environmental Exposure:

The primary hazard of sodium silicate is the alkalinity. Avoid generation of dust. Avoid release to the environment.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties:

Appearance:	Powder. Granules. White.
Odour:	Odourless.
Odour threshold (ppm):	Not applicable.
pH (Value):	Strongly alkaline.
Freezing Point (°C):	Not applicable.
Melting Point (°C):	72.2
Boiling Point (°C):	Not applicable.
Flash Point (°C) [Closed cup]:	Not applicable.
Evaporation rate:	Not applicable.
Flammability (solid, gas):	Not applicable.
Explosive limit ranges:	Not applicable.
Vapour Pressure (mm Hg):	Not applicable.
Vapour Density (Air=1):	Not applicable.
Density (g/ml):	No data.
Solubility (Water):	Soluble.
Solubility (Other):	No data.
Partition Coefficient:	No data.
Auto Ignition Temperature (°C):	Not applicable.
Decomposition Temperature (°C):	Not applicable.
Viscosity (mPa.s):	Not applicable.
Explosive properties:	Not applicable.
Oxidising Properties:	Not applicable.
Other information:	No data.

10. STABILITY AND REACTIVITY

Reactivity: See Section: 10.3

Chemical stability: This product is hygroscopic.

Possibility of hazardous reactions: When arc welding vessels containing aqueous solutions of this material, take care to control any explosion risk from hydrogen evolved by electrolysis. Aqueous solutions will react with aluminium, zinc, tin and their alloys evolving hydrogen gas which can form explosive mixture with air. Can react violently if in contact with acids. Can react with sugar residues to form carbon monoxide.

Conditions to avoid: See Section: 10.3

Incompatible materials: See Section: 10.3

Hazardous decomposition product(s): None known.

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11. TOXICOLOGICAL INFORMATION

Information on toxicological effects:

Acute toxicity:

Ingestion: Material will cause chemical burns. All symptoms of acute toxicity are due to high alkalinity.
Oral LD50 (rat) 1152-1349 mg/kg bw

Inhalation: Dust is severely irritant to the respiratory tract. All symptoms of acute toxicity are due to high alkalinity. Inhalation LC50 (rat) >2.06 g/m3

Skin Contact: Material will cause chemical burns. Dermal LD50 (rat) >5000 mg/kg bw

Skin corrosion/irritation: Causes severe skin burns and eye damage.

Serious eye damage/irritation: Causes serious eye damage.

Sensitisation: It is not a skin sensitiser.

Respiratory sensitisation data: No data.

Germ cell mutagenicity: No evidence of genotoxicity. In vitro/in vivo negative.

Carcinogenicity: No structural alerts.

Reproductive toxicity: No evidence of reproductive toxicity or developmental toxicity.

Lactation: No data.

STOT-single exposure: May cause respiratory irritation.

STOT-repeated exposure: NOAEL oral (rat) 227 mg/kg bw/d

Aspiration hazard: Not classified.

Other information: Not applicable.

12. ECOLOGICAL INFORMATION

Toxicity: Fish (Brachydanio rerio) LC50 (96 hour) 210 mg/l.
Aquatic invertebrates: (Daphnia magna) EC50 (48 hour) 1700 mg/l (by analogy).

Persistence and degradability: Inorganic. Soluble silicates, upon dilution, rapidly depolymerise into molecular species indistinguishable from natural dissolved silica.

Bio accumulative potential: Inorganic. The substance has no potential for bioaccumulation.

Mobility in soil: Not applicable.

Results of PBT and vPvB assessment: Not classified as PBT or vPvB.

Other adverse effects: The alkalinity of this material will have a local effect on ecosystems sensitive to changes in pH.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods: Dispose of this material and its container to hazardous or special waste collection point. This material is classified as hazardous waste under EEC Directive 91/689/EEC (and amendments). This material is classified as hazardous waste under the Hazardous Waste (England and Wales) Regulations SI 2005 No. 894. Disposal should be in accordance with local, state or national legislation.

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14. TRANSPORT INFORMATION

UN Number: 3253
Proper Shipping Name: Disodium Trioxosilicate
Transport hazard class: 8
Packing group: III
Environmental hazards: Not classified as a Marine Pollutant.
Special precautions for users: Unsuitable containers: Aluminium
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable.

15. REGULATORY INFORMATION

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

European Regulations:

Authorisations and/or Restrictions On Use Candidate List of Substances of Very High: Not listed

Concern for Authorisation: Not listed

REACH: ANNEX XIV list of substances subject to authorisation: Not listed

Regulation (EC) N° 850/2004 of the European Parliament and of the Council on persistent organic Pollutants: Not listed

Regulation (EC) N° 1005/2009 on substances that deplete the ozone layer Regulation (EU) N° 649/2012 of the European Parliament and of the Council concerning the export and import of hazardous chemicals: Not listed

National regulations:

Germany Inventory Status: German Water Hazard Classification WV's:

Product ID number: 847, WGK class 1 (low hazard to water).

TSCA Inventory Status: Reported/Included.

AIIC Inventory Status: Reported/Included.

DSL/NDSL Inventory Status: Reported/Included.

Chemical safety assessment: A REACH chemical safety assessment has been carried out.

Note: The regulatory information given above only indicates the principal regulations specifically Applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

16. OTHER INFORMATION

Hazard statement(s): H290: May be corrosive to metals. H314: Causes severe skin burns and eye damage.
H335: May cause respiratory irritation.

Legal disclaimer: The information contained in this SDS does not constitute a risk assessment, and should not replace the user's own assessment of risks as required by other health and safety legislation. This advice is given by Nexchem Ltd who accept no legal liability for it except otherwise provided by law. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be construed as guaranteeing specific properties.

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