

SAFETY DATA SHEET

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product Name	METSO PENTABEAD® 20
Alternative names	Sodium metasilicate pentahydrate
CAS No.	10213-79-3

1.2 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
Uses advised against	None known.

1.3 Details of the supplier of the safety data sheet

Company Identification	PQ Corporation P.O. Box 840 Valley Forge PA 19482 USA
Telephone:	+1 610-651-4200
E-Mail (competent person)	sds.uk@pqcorp.com

1.4 Emergency telephone number

Emergency Phone No.	+1 800-424-9300
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SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification	Skin Corr. 1B / Eye Dam. 1 STOT SE 3 Met. Corr. 1
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2.2 Label elements

Hazard pictogram(s)



Signal word(s)

Danger

Hazard statement(s)

Causes severe skin burns and eye damage.
May cause respiratory irritation.
May be corrosive to metals.

Precautionary statement(s)	Do not breathe dust. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Absorb spillage to prevent material damage. Store locked up. Store in a well-ventilated place. Keep container tightly closed. Store in corrosive resistant container with a resistant inner liner. Dispose of contents in accordance with local, state or national legislation.
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2.3 Other hazards Not applicable.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient(s)	%W/W	CAS No.	EINECS No. / REACH Registration	Hazard symbol(s) and hazard statement(s)
Sodium metasilicate pentahydrate	58	6834-92-0	2299129	H314 : Skin Corr. 1B Eye Dam. 1 ; H335 : STOT SE 3 ; H290 : Met. Corr. 1 ;
Water	42	7732-18-5		

SECTION 4: FIRST AID MEASURES

4.1 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	Wash 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.

4.2 Most important symptoms and effects, both acute and delayed

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

4.3 Indication of any immediate medical attention and special treatment needed

Obtain immediate medical attention.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing Media	Compatible with all standard fire fighting techniques.
Unsuitable extinguishing Media	None known.

- 5.2 Special hazards arising from the substance or mixture Not applicable. Inorganic powder or granules. Non-combustible.
- 5.3 Advice for fire-fighters None.

SECTION 6: ACCIDENTAL RELEASE MEASURES

- 6.1 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.
- 6.2 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.
- 6.3 Methods and materials 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.
- 6.4 Reference to other sections See also Section 8.

SECTION 7: HANDLING AND STORAGE

- 7.1 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.
- 7.2 Conditions for safe storage, including any incompatibilities Keep container tightly closed and dry. Unsuitable containers: Aluminium See Also Section 10.
- 7.3 Specific end use(s) Not available.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

SUBSTANCE.	Occupational Exposure Limits
Disodium metasilicate	No Occupational Exposure Limit assigned. An exposure limit of 2 mg/m ³ (15 min TWA) is recommended by analogy with sodium hydroxide (UK EH40).

- 8.2 Exposure controls Wear protective equipment to comply with good occupational hygiene practice. Do not eat, drink or smoke at the work place.
- 8.2.1 Appropriate engineering controls 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.
- 8.2.2 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 (EN 166).
- Skin protection Wear suitable protective clothing and gloves. PVC or rubber gloves. For example EN374-3. Wear suitable overalls.
- 8.2.3 Environmental Exposure Controls The primary hazard of sodium silicate is the alkalinity. Avoid generation of dust. Avoid release to the environment.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Powder. Granules. White.
Odour	Odourless.
Odour Threshold (ppm)	Not applicable.
pH (Value)	Strongly alkaline. Approx 14
Freezing Point (°C)	Not applicable.
Melting Point (°C)	1089
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 Point (°C)	Not applicable.
Decomposition Temperature (°C)	Not applicable.
Viscosity (mPa. s)	Not applicable.
Explosive properties	Not applicable.
Oxidising Properties	Not applicable.
9.2 Other information	No data.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity	See Section: 10.3
10.2 Chemical stability	This product is hygroscopic.
10.3 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 an explosive mixture with air. Can react violently if in contact with acids. Can react with sugar residues to form carbon monoxide.
10.4 Conditions to avoid	See Section: 10.3
10.5 Incompatible materials	See Section: 10.3
10.6 Hazardous decomposition product(s)	None known.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 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/m ³
Skin Contact	Material will cause chemical burns. Dermal LD50 (rat) >5000 mg/kg bw
Eye Contact	Material will cause chemical burns. May cause permanent damage if eye is not immediately irrigated.
Skin corrosion/irritation	Corrosive to: Skin.
Serious eye damage/irritation	Corrosive to: Eyes.

Sensitisation	Not sensitising. (LLNA)
Mutagenicity	No evidence of genotoxicity. In vitro/in vivo negative.
Carcinogenicity	No structural alerts.
Reproductive toxicity	No evidence of reproductive toxicity or developmental toxicity.
STOT - single exposure	Irritating to respiratory system.
STOT - repeated exposure	Not classified. NOAEL oral (rat) 227 mg/kg bw/d
Aspiration hazard	Not classified
Other information	Not applicable.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity	Fish (Brachydanio rerio) LC50 (96 hour) 210 mg/l Aquatic invertebrates: (Daphnia magna) EC50 (48 hour) 1700 mg/l
12.2 Persistence and degradability	Inorganic. Soluble silicates, upon dilution, rapidly depolymerise into molecular species indistinguishable from natural dissolved silica.
12.3 Bioaccumulative potential	Inorganic. The substance has no potential for bioaccumulation.
12.4 Mobility in soil	Not applicable.
12.5 Results of PBT and vPvB assessment	Not classified as PBT or vPvB.
12.6 Other adverse effects	The alkalinity of this material will have a local effect on ecosystems sensitive to changes in pH.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 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 EC Directive 2008/98/EC. 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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SECTION 14: TRANSPORT INFORMATION

14.1 UN number	3253
14.2 Proper Shipping Name	Disodium trioxosilicate
14.3 Transport hazard class(es)	8
14.4 Packing group	III
14.5 Environmental hazards	Not classified as a Marine Pollutant.
14.6 Special precautions for user	Unsuitable containers: Aluminium
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.

SECTION 15: REGULATORY INFORMATION

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

TSCA Inventory Status: Reported/Included.

AICS Inventory Status: Reported/Included.

DSL/NDSL Inventory Status: Reported/Included.

German Water Hazard Classification VwVwS: Product ID number 847, WGK class 1 (low hazard to water).

15.2 Chemical Safety Assessment	Information available on request.
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SECTION 16: OTHER INFORMATION

Data referenced in this eSDS is from company-owned information and from data legitimately accessed by PQ Corporation through membership of Industry Consortia or other agreements. This includes data relating to toxicology, ecotoxicology, DNELs, PNECs and other information in this eSDS and its annex.

This SDS was last reviewed: 02/2022

The following sections contain revisions or new statements: No significant changes required to this version at last review.

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