

BETORAST STRONG

Safety Data Sheet

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

- 1.1 Product identifier:** BETORAST STRONG
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:**
Product designed for cleaning cement trucks and mobile concrete mixers.
- 1.3 Details of the supplier of the safety data sheet:**
- TENZI Sp. z o.o.
Skarbimierzyce 20
72-002 Dołuje
tel. +48 91 3119777
fax. +48 91 3119779
E-mail address for a competent person responsible for SDS: technolog@tenzi.pl
- 1.4 Emergency telephone number:**
+48 91 31 19 777 (mon. - fri. 8am - 4pm) or 112.

SECTION 2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture:

Classification according to Regulation (EC) No. 1272/2008:

- Skin Corr. 1A H314** – Causes severe skin burns and eye damage.
Eye Dam. 1 H318 – Causes serious eye damage.
Met.Corr 1 H290 – Substance/Mixture is corrosive to metals, category 1
STOT SE 3 H335 – May cause respiratory irritation.

2.2. Label elements:
(According to 1272/2008/EC*)

Hazard symbols:



Signal words:
DANGER

Hazard statements:

- H290** – May be corrosive to metals.
H314 – Causes severe skin burns and eye damage.
H335 – May cause respiratory irritation.

Precautionary statements:

- P271** – Use only outdoors or in a well-ventilated area.
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): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

BETORAST STRONG

Safety Data Sheet

P305+P351+P338

– IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310

– Immediately call a POISON CENTER/doctor

P405

– Store locked up.

2.3. Other hazards:

Substance does not meet criteria for PBT or vPvB in accordance with Annex XIII of REACH Regulation.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1. Substances:

Not applicable.

3.2. Mixtures:

Composition (according to: 648/2004/EC):

- < 20% hydrochloric acid
- < 15% sulphuric acid
- < 5% anionic surfactants
- auxiliary substances not classified as dangerous

| Identification | Hazardous ingredient/classification | Concentration |
|---|---|-----------------------------|
| CAS: Not applicable. WE: 231-595-7 Index: 017-002-01-X Registration: 01-2119484862-27-XXXX | Hydrochloric acid (30%) Met. Corr. 1 H290, Skin Corr. 1B H314, STOT SE 3 H335 | < 20% (active substance) |
| CAS: 7664-93-9 WE: 231-639-5 Index: 016-020-00-8 Registration: 01-2119458838-20-XXXX | Sulphuric acid (96%) Skin Corr. 1A H314 | < 15% |

The full texts of H symbols and phrases are in section 16.

SECTION 4. FIRST AID MEASURES

4.1. Description of first aid measures:

Inhalation:

In case of inhalation poisoning symptoms (cough, dyspnea, dizziness) move the injured to fresh air. Make sure to keep him calm and warm. Immediately get medical attention if alarming symptoms persist.

Skin contact:

If product comes in contact with the skin, immediately remove all contaminated clothing and flush exposed area with large amounts of water. In case of skin changes or burns, get medical attention.

Eye contact:

Flush eyes with running water (at least 15 minutes) while keeping eyelids open. Get medical attention.

BETORAST STRONG

Safety Data Sheet

Ingestion:

DO NOT induce vomiting. Give lots of water to drink. DO NOT give any neutralizing agents. Immediately get medical attention and show this SDS or label.

4.2. Most important symptoms and effects, both acute and delayed:**Inhalation:**

Long-term exposure without proper ventilation system may cause irritation of the upper respiratory tract, dyspnea, coughing and sore throat.

Skin:

Corrosive. Causes serious skin burns.

Eyes:

Corrosive. Causes severe eye burns, chemical conjunctivitis and corneal damage (redness, intense pain), possible irreversible impairment of vision or blindness.

Ingestion:

Irritant. May cause burning in mouth, throat and stomach. May also cause nausea and vomiting.

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

Get medical attention.

Fresh water and eye-wash preparations must be available on the worksite.

SECTION 5. FIREFIGHTING MEASURES

5.1. Extinguishing media:**Suitable extinguishing media:**

Sand, foam, water, carbon dioxide.

Unsuitable extinguishing media:

There are not any known extinguishing media that you shouldn't use.

5.2. Special hazards arising from the substance or mixture:

Product is non-flammable. During fire, there is a chance that the product will create dangerous gas and vapours.

In contact with metal, there is a possibility of emitting hydrogen (risk of explosion).

Furthermore, there is also a chance of creating hydrogen chloride and chlorine during fire.

5.3. Advice for firefighters:

Firefighters should wear self-contained breathing apparatus and full protective clothing. In case of fire, warn the people nearby and evacuate unprotected and untrained personnel from hazard area. Notify relevant emergency services. If possible, remove the containers away from the influence of fire and high temperature. Water may be used to keep fire-exposed containers cool until fire is out. The after burning residues should be removed

BETORAST STRONG

Safety Data Sheet

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Self-contained breathing apparatus, protective chemical-proof gloves (0.11 mm thick), safety glasses.

For emergency responders:

Protective clothes, protective chemical-proof gloves (0.11 mm thick), self-contained breathing apparatus, safety glasses. Avoid skin and eye contact. Provide proper ventilation..

6.2. Environmental precautions:

Avoid discharge into drains, watercourses or onto the ground.
In case of environmental pollution, contact local authorities

6.3. Methods and material for containment and cleaning up:

In case of unexpected release of the substance into the environment, inform appropriate services about the emergency and remove any source of ignition. Prevent spills from entering sewers, surface water or groundwater. If it is possible, confine and contain the spill by closing the flow of the liquid, plug the damaged container and put it into leakproof wrapping. For a larger spill, make a dike around the outside edges of the spill and use absorbent materials (sand, sawdust, minced limestone). Store clean-up materials for disposal as hazardous waste. Decontaminate polluted area with water. Product containing hydrochloric acid should be neutralized by alkaline substances (sodium carbonate, whitewash, sodium hydroxide).

6.4. Reference to other sections:

See section 8 and 13.

SECTION 7. HANDLING AND STORAGE

7.1. Precautions for safe handling:

Be careful when working with this product.
Use personal protection recommended in section 8
Mix only with water. DO NOT mix with any other chemical substances.
People with skin allergy or respiratory system problems should not have contact with this product.
Avoid risk – read this instruction sheet carefully before using the product.
After usage, keep container tightly closed and keep it away from unauthorized people.
Use only adequate ventilation to avoid inhalation poisoning.

7.2. Conditions for safe storage, including any incompatibilities:

Store in a tightly closed, original plastic container. Store this product in a dry environment that will be maintained at 5°C - 35°C temperature with a good ventilation system and an easy washable, nonabsorbable alkaline resistant floor. DO NOT expose the product to sunlight and keep away from heat, sparks, flame and source of ignition.

7.3. Specific end use(s):

No data available.

SECTION 8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

8.1. Control parameters:

Please check any national occupational exposure limit values in your country.

BETORAST STRONG

Safety Data Sheet

NDS/NDSch/NDSP values for individual chemical substances (according to SDS or Chemical Safety Report):

Hydrochloric acid (data for highly concentrated substance):

NDS: 5 mg/m³
NDSch: 10 mg/m³
NDSP: not identified.

Sulphuric acid (data for highly concentrated substance):

NDS: 0.05 mg/m³
NDSch: not identified.
NDSP: not identified.

DNEL /PNEC values for individual chemical substances (according to SDS or Chemical Safety Report):

Hydrochloric surfactants (data for highly concentrated substance):

DNEL:

Group: workers, Exposure time: short-term, Exposure route: inhalation, Type of effect: local effect, Value: 15 mg/m³
Group: workers, Exposure time: long-term, Exposure route: inhalation, Type of effect: local effect, Value: 8 mg/m³

PNEC:

Aqua (fresh water): 0.036 mg/l
Aqua (marine water): 0.036 mg/l
Intermittent release: 0.045 mg/l
Soil: 0.036 mg/kg

Sulphuric acid (data for highly concentrated substance):

DNEL:

Group: workers, Exposure time: acute, Exposure route: inhalation, Type of effect: systemic effect, Value: 0.1 mg/m³/15m
Group: workers, Exposure time: long-term, Exposure route: inhalation, Type of effect: systemic effect, Value: 0.1 mg/m³/15m
Group: workers, Exposure time: long-term, Exposure route: inhalation, Type of effect: systemic effect, Value: 0.015 mg/m³/8h

PNEC:

Aqua (fresh water): 0.0025 mg/l
Aqua (marine water): 0.00025 mg/l
Active sediment: 8.8 mg/l

NOTE: When the concentration of substance is known, personal protective equipment should be chosen based on substance concentration in a workplace, exposure time and operations performed by the employee. In emergency situations, if substance concentration in the workplace is unknown, personal protection of highest class level should be used.

8.2. Exposure controls:

RESPIRATORY PROTECTION:

Gas mask with universal absorber (ABEK) or the one for acidic gas and vapours (E).

HAND PROTECTION:

Protective gloves resistant to acidic substances (0.11 mm thick).

EYE/FACE PROTECTION:

Safety glasses.

BETORAST STRONG

Safety Data Sheet

SKIN PROTECTION:

Protective clothes.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties:

| | |
|-----------------------------------|---------------------------------|
| Appearance: | Yellow coloured liquid |
| Odour: | Characteristic (harsh) |
| Odour threshold: | No data available |
| pH: | 1 ± 1 |
| Melting point: | No data available |
| Freezing point: | No data available |
| Initial boiling point: | No data available |
| Boiling range: | No data available |
| Flash point: | No data available |
| Evaporation rate: | No data available |
| Flammability (solid, gas): | No data available |
| Upper flammability limit: | No data available |
| Lower flammability limit: | No data available |
| Upper explosive limit: | No data available |
| Lower explosive limit: | No data available |
| Vapour pressure: | No data available |
| Vapour density: | No data available |
| Relative density: | 1.180 ± 0.020 g/cm ³ |

Solubility:

| | |
|----------------------------|-------------------|
| A) Water: | soluble |
| B) Organic solvent: | No data available |

| | |
|---------------------------------------|-------------------|
| Partition coefficient N-Octan: | No data available |
| Partition coefficient Water: | No data available |
| Auto-ignition temperature: | No data available |
| Decomposition temperature: | No data available |
| Viscosity: | No data available |
| Explosive properties: | No data available |
| Oxidising properties: | No data available |

9.2. Other information:

Refractive index: No data available Brix* ± 5%

* - Degrees Brix is the content of an aqueous solution. One degree Brix is 1 gram of sucrose in 100 grams of solution and represents the strength of the solution as percentage by weight (%w/w).

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity:

Reacts with alkali and oxidizers.

10.2 Chemical stability:

Stable under recommended storage conditions (see section 7).

BETORAST STRONG

Safety Data Sheet

10.3 Possibility of hazardous reactions:

Reacts very violently with strong alkali. Explosion risk.

10.4 Conditions to avoid:

Avoid heavily warmed rooms without ventilation and long-term exposure to sunlight.

10.5 Incompatible materials:

Materials to avoid: aluminum and other metals, amines, carbides, hydrides, fluorine, alkaline metals, potassium permanganate, strong alkali, acid salts.

10.6 Hazardous decomposition products:

Hydrogen chloride, chlorine and hydrogen.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

ACUTE TOXICITY:

Inhalation: long-term exposure without proper ventilation system may cause irritation of the upper respiratory tract.

Skin contact: causes serious skin burns

Eye contact: causes severe eye burns, chemical conjunctivitis and corneal damage (redness, intense pain), possible irreversible impairment of vision or blindness

Digestive system: may cause burns in mouth, throat and stomach and even nausea and vomiting.

DETAILS OF PARTICULAR COMPONENTS (according to substance's SDS):

Hydrochloric acid (data for highly concentrated substance):

LD50: 238-277 mg/kg (rat, orally)
LD50: > 5010 mg/kg (rabbit, dermal)
LC50: 4701 ppm/0.5h (rat, inhalation)

Very harmful after swallowing. Causes burns in mouth, throat and stomach.

Corrosive effects on skin.

Serious and irreversible eye damage. Risk of blindness.

No allergic effects.

No mutagenic effects.

No carcinogenic effects.

Corrosive effects on respiratory system.

Sulphuric acid (data for highly concentrated substance):

LD50: 2140 mg/kg (orally)
LC50: 375 mg/m³ (inhalation)

Corrosive to skin.

Corrosive to eyes.

No allergic effects.

No mutagenic effects.

No carcinogenic effects.

Harmful to reproductive system (NOAEC 19.3 mg/m³, inhalation)

Repeated exposure (NOAEC 0.3 mg/m³)

BETORAST STRONG

Safety Data Sheet

SECTION 12. ECOLOGICAL INFORMATION

12.1. Toxicity:

Data for the mixture ingredients:

Hydrochloric acid (data for highly concentrated substance):

In aquatic environment, effect of hydrogen chloride is dependent on the pH. It fully dissociates to ions in the water and in the effect, it doesn't cause any harm. Substance in this form doesn't have any sediment deposition properties.

| | | | | |
|-------|----------------|----------------------|---------------|------------|
| LC50: | 20.5 mg/l/96h | (fish) | (pH 3.25-3.5) | |
| EC50: | 0.45 mg/l/4l | (daphnia) | | |
| LC50: | 0.45 mg/l/4l | (daphnia) | | |
| EC50: | 0.76 mg/l/72h | (algae) | (pH 4.7) | |
| NOEC: | 0.364 mg/l/72h | (algae) | (pH 5.0) | (OECD 201) |
| EC50: | 0.73 mg/l | (algae, fresh water) | | |
| LC50: | 0.73 mg/l | (algae, fresh water) | | |

Sulphuric acid (data for highly concentrated substance):

| | | | | |
|-----------------|------------|-----------------------|--|--|
| LC/EC10/NOEC: | 0.025 mg/l | (fish) | | |
| EC50: | > 100 mg/l | (daphnia) | | |
| EC50/LC50: | 100 mg/l | (invertebrates) | | |
| EC10/LC10/NOEC: | 0.15 mg/l | (invertebrates) | | |
| EC10/LC10/NOEC: | 100 mg/l | (algae) | | |
| EC10/LC10/NOEC: | 26000 mg/l | (aqua microorganisms) | | |

12.2. Persistence and degradability:

The surfactants contained within the product comply with the biodegradability criteria as laid down in Regulation (EC) No 648/2004 on detergents.

Data for the mixture ingredients:

Hydrochloric acid (data for highly concentrated substance):

Easily biodegradable in water and air.
Substance rapidly dissolves and subsequently dissociates in water.

Sulphuric acid (data for highly concentrated substance):

Inorganic substance.

12.3. Bioaccumulative potential:

Hydrochloric acid (data for highly concentrated substance):

It's not bioaccumulative.

12.4. Mobility in soil

Hydrochloric acid (data for highly concentrated substance):

In accordance to soil's buffer capacity, ion hydrogen concentration will be neutralized by organic and non-organic substances that are present in soil, or there may be sudden decrease of pH in the place of leakage.

Sulphuric acid (data for highly concentrated substance):

Fully soluble in water.

12.5. Results of PBT and vPvB assessment:

This substance/mixture does not meet the PBT and vPvB criteria of REACH, annex XIII.

BETORAST STRONG

Safety Data Sheet

12.6. Other adverse effects:

May pose danger to biological treatment plants (decreases pH).

SECTION 13. DISPOSAL CONSIDERATIONS

RESIDUES AND WASTES:

DO NOT mix with other liquid wastes.

DO NOT empty into sewage system. Product should be totally used up according to its description.

If it's impossible to do so, dispose of this material and its container at hazardous or special waste collection point.

13.1. Waste treatment methods:

Contaminated containers should be completely emptied. Several times rinse the container promptly after emptying. Empty container can be stored in containers for collection of plastic packaging, or can be delivered to specialized company for recycling.

Disposal should be in accordance with the national/international regulations.

SECTION 14. TRANSPORT INFORMATION

TRADE NAME: BETORAST STRONG

- 14.1. UN Number: 3264
14.2. UN proper shipping name: Corrosive liquid, acidic, inorganic, N.O.S. (hydrochloric acid, sulphuric acid)
14.3. Transport hazard class(es): 8
14.4. Packing group: III
14.5. Environmental hazards: No.
14.6. Special precautions for user: For more details see Sections 6 and 8.
14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: No data available.

WARNING LABELS



SECTION 15. REGULATORY INFORMATION

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

- 1) COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).
- 2) REGULATION (EC) No 648/2004 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 31 March 2004 on detergents.

BETORAST STRONG

Safety Data Sheet

- 3) COMMISSION REGULATION (EC) No 907/2006 of 20 June 2006 amending Regulation (EC) No 648/2004 of the European Parliament and of the Council on detergents, in order to adapt Annexes III and VII thereto.
- 4) REGULATION (EC) No 1336/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 amending Regulation (EC) No 648/2004 in order to adapt it to Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures.
- 5) COMMISSION REGULATION (EC) No 551/2009 of 25 June 2009 amending Regulation (EC) No 648/2004 of the European Parliament and of the Council on detergents, in order to adapt Annexes V and VI thereto (surfactant derogation).
- 6) REGULATION (EU) No 259/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 14 March 2012 amending Regulation (EC) No 648/2004 as regards the use of phosphates and other phosphorus compounds in consumer laundry detergents and consumer automatic dishwasher detergents.
- 7) REGULATION (EC) No 273/2004 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 February 2004 on drug precursors).
- 8) REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

15.2. Chemical safety assessment

For mixture:

A Chemical Safety Assessment has not been carried out.

For following mixture substances:

Hydrochloric acid A Chemical Safety Assessment has been carried out.

Sulphuric acid: A Chemical Safety Assessment has been carried out.

SECTION 16. OTHER INFORMATION

Information above is based on current knowledge of product in its current form.

All data are presented in order to take into account safety requirements priority and not to guarantee special properties of the product. If product usage conditions are not under manufacturer control, responsibility for safe use lies with the person that uses them. The employer is obliged to inform all employees, who have contact with the product, about the risk and safety measures specified in the data sheet. Safety data presented above were prepared based on safety characteristics of substances used by the producer to compose the product and based on regulations for handling dangerous substances and their preparation. Classification of chemical mixture was done with calculation methods, based on the content of hazardous ingredients.

The full list of symbols and H phrases from Section 2 and 3:

| | |
|----------------------|--|
| Met.Corr 1 | – Substance/Mixture is corrosive to metals, category 1 |
| Skin Irrit. 2 | – Causes skin irritation, category 2. |
| Eye Irrit. 2 | – Causes serious eye irritation, category 2. |
| Skin Corr. 1A | – Corrosive to skin, category 1A. |
| Skin Corr. 1B | – Corrosive to skin, category 1B. |
| STOT SE 3 | – Specific target organ toxicity - Single exposure STOT, category 3. |
| H290 | – May be corrosive to metals. |
| H314 | – Causes severe skin burns and eye damage. |
| H315 | – Causes skin irritation. |
| H319 | – Causes serious eye irritation. |
| H335 | – May cause respiratory irritation. |

More information on the product can be found on the specific technical data sheet which is available on www.tenzi.pl



BETORAST STRONG

Safety Data Sheet

Training:

Course participants should be trained about how to handle this hazardous substance, about safety and work hygiene. Drivers should also be trained and obtain proper certification in accordance with the ADR requirements.

Expiry date:

36 months from the production date (if product is stored according to the producent recommendations)

Changes compared to the previous version:

- overall update

Updated cards versions are now available on www.tenzi.pl

This Safety Data Sheet contains 11 pages. Changes in the content by unauthorized people is prohibited.