

Material Safety Data Sheet

Pickling Bath 302

1. IDENTIFICATION OF PREPARATION AND COMPANY

Product identifier: Transparent, brownish liquid with acidic smell

Trade name: Avesta Classic Pickling Bath 302

Application and use: Pickling of stainless steel

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Manufacturer: **Böhler Welding Group Nordic AB**
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2. HAZARDS IDENTIFICATION

Health hazard in case of accidental exposure (R-phrases):

R 26/27/28: Very toxic by inhalation, in contact with skin and if swallowed. R 35: Causes severe burns. See also section 11.

Environmental effects:

Pickling Fluid will strongly reduce pH in water. Must be neutralised. See also section 12.

Physical and chemical risks:

When heated nitrous gases can be developed. Only for treatment of stainless steel, not to be used on other metals. See also section 5 and 10.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Preparation

Chemical nature:

Strong acid solution with corrosive properties.

Hazardous components, chemical name, formula	CAS No.	EC No.	Contents weight-%	Hazard symbol/ Risk phrase*
Nitric acid, HNO ₃	7697-37-2	231-714-2	40-50	O, C: R8, R35
Hydrofluoric acid, HF	7664-39-3	231-634-8	10-15	T+, C: R26, 27, 28-35

*The full texts of the phrases are shown in section 16.

Additional information:

Classification according to directive 67/548/EEC.

Symbols and risk phrases are for concentrated substances.



4. FIRST AID MEASURES

Measures to be taken immediately after the following ways of contact with pickling acids.

Inhalation:

Remove to fresh air. Keep victim lying down, quiet and warm. Rinse nose and mouth with water. Might require assistance with breathing. Seek medical care even if only slight inconvenience occur.

Ingestion:

If victim is conscious and alert give milk or water to drink. Thereafter 20 lime tablets dissolved in 2 L of water. Do not induce vomiting. Seek medical care.

Skin contact:

Alternative A - Rinse immediately with plenty of water, then treat with 2.5% Calcium Gluconate gel. If not available, see alt. B.

Alternative B - Rinse immediately with *Avesta First Aid Spray 910*. Spray liberally onto the affected area, always using the complete content. Avoid rinsing with water first, as it reduces the effect of the solution.

After alternative A and B seek medical help.

Eye contact:

Treat with *Avesta First Aid Spray 910*. If not available, rinse immediately with plenty of water for at least 15 minutes. Thereafter seek immediate medical care (eye specialist).

Information for medical care:

Inform the doctor that the injury has been caused by contact with hydrofluoric and nitric acid solutions. Anti-dote treatment after contact with hydrofluoric acid is Calcium Gluconate.

5. FIRE FIGHTING MEASURES

Danger of fire/explosion:

Fluid is non-flammable. In contact with metals hydrogen gas is formed in small quantities, which together with air can cause explosion. Bottles close to fire should be removed or cooled with water.

Extinguishing media:

Use water spray to cool fire-exposed containers. Substance is non-flammable; use agent most appropriate to extinguish surrounding fire. Released product should be neutralised with caustic soda.

Chemical exposure risks caused by the product itself:

The Pickling Fluid will cause corrosive damage on skin-contact.

Chemical exposure risks caused by released gases/vapours:

The Pickling Fluid will emit toxic fumes and nitrous gases when exposed to heat/fire.

Protective clothing for firemen:

Normal protective clothing.



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Breathing protection:

Gas mask with filter of chlorine type B (grey) and dust filter P2, according to CEN (Central European Norms).

How to clean or destroy soiled fire equipment:

Thoroughly wash with water.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Avoid direct contact. Wear eye-protection, skin-protection, rubber gloves and breathing apparatuses. Keep working area well ventilated. See also section 7 and 8.

Environmental precautions (water, air, soil):

Prevent spillage from entering sewage or public waters.

Methods for cleaning up:

Neutralise with Avesta Neutralising Agent or a strong alkaline compound i.e. slaked lime. Embank with sand. Arrange for pick up. Rinse with plenty of water.

Spillage and decontamination:

Spillage should be picked up and disposed of in full compliance with federal, state and local regulations as acid waste. See section 13.

7. HANDLING AND STORAGE

Handling

Technical measures:

Working place and methods should be worked out in order to avoid direct contact. Work and storage area should be well ventilated. A closed rinse water system with filtration and reuse of clear water is recommended.

To prevent fire and explosion:

Bottles close to fire should be removed or cooled with water.

Precautions:

Avoid fume generation and accumulation by using in a well-ventilated area. Use in areas having local exhaust and general ventilation.

Avesta First Aid Spray 910 for both eyes and skin, should be available at the premises. Emergency eyewash and safety shower must be available at the working place.

Storage

Technical measures:

Storage room should be kept separate, cool, dry, well ventilated and closed to unauthorised persons.

Incompatible products:

Not applicable

Storage conditions:

Keep containers securely closed when not in use and in an upright position. Store in areas where temperature remains between 0-30°C at all times.



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Packaging materials:

Packaging material must be of acid resistant plastic material.

Specific use:

Contact the manufacturer for more information.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Exposure limits:

Hydrofluoric acid: CLV 1.7 mg/m³ (8 hours),

Nitric Acid: LLV 5 mg/m³ (15 min.)

Engineering controls:

Keep working area well ventilated, local exhaust ventilation is recommended. Use personal protective equipment.

Personal protective equipment

Respiratory protection:

Gas mask with a filter of the chlorine type B (grey) and dust filter P2.

Hand protection:

Acid resistant rubber-gloves.

Eye protection:

Face shield.

Skin and body protection:

Rubber boots and acid resistant clothes, which covers all body parts exposed to splashes.

Specific hygienic measures:

Do not inhale fumes, avoid contact with eyes, skin and clothes. It is not allowed to eat, drink and smoke at workplace. Remove contaminated clothes immediately. Wash hands and face thoroughly after working with pickling paste. Avesta First Aid Spray 910 should be available at the premises.

Environmental exposure controls:

See section 6 and 7.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state (form, colour, smell) at 20°C:

Colourless liquid with a pungent smell.

Boiling point:

80-100°C

Flash point / Explosion properties:

Not applicable

Specific temperatures:

Solid-fluid 40°C, Fluid-gas 50-60°C (nitrous fumes)

Vapour pressure at 20°C:

< 0.01 kPa

pH:

0 at 20°C



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Density:

1.1-1.4 g/cm³ at 20°C

Solubility in water at 20°C:

100 weight %

Solubility in organic solvents:

Not applicable.

10. STABILITY AND REACTIVITY

Stability:

Stable under normal conditions, polymerisation will not occur.

Conditions to avoid:

Avoid high temperatures, must not be exposed to direct sunshine. When heated nitrous gases will be developed.

Material to avoid:

Alkaline compounds and water, will give an exothermal reaction, with heat development.

Hazardous decomposition products:

Will emit nitrous gases.

11. TOXICOLOGICAL INFORMATION

Local effects

Effects on the skin:

Gives corrosive damages with yellowish discoloration of the skin, blisters and slow-healing wounds.

Effects on the eyes:

Causes intensive pain and corrosive damages. Risk of irreparable damage to the eyes.

After ingestion:

Gives corrosive damages with burning pain, possibly severe general effect and damage to kidneys and liver.

Upon inhalation:

Inhalation of fumes or mist might cause aches, cough and difficulty in breathing. Risk for oedema on the lungs.

CMR-effects:

Not known

Additional information:

Symptoms will not appear immediately.

12. ECOLOGICAL INFORMATION

Ecotoxicity Hydrofluoric acid:

Fish (fresh water), 60ppm, lethal (time period not specified)



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Environmental effects

Mobility:

The product in its concentrated form will have a poisonous influence on the ground and water. During usage the product will be diluted with water but will still lower the pH of ground-water and may not be discharged into the Clearwater system without pre-treatment.

Persistence/degradability:

Will be protolyzed in water to H^+ , NO_3^- , F^- .

Bioaccumulative potential:

The product is not regarded as bioaccumulative.

Results of PBT assessment:

See section 16.

Other adverse effects:

Not known

13. DISPOSAL CONSIDERATIONS

Methods of disposal

Product:

Discarded product and related waste is hazardous waste. Alloting of EWC-code should be made on the basis of the source causing the waste.

Suggested EWC-code is 11 01 05* Pickling acids

Waste from residues:

Contaminated residues i.e. wastewater must be neutralised to restore its pH-value to pH 6-11, and heavy metals resulting from the cleaning of stainless steel should be removed. Neutralise with Avesta Neutraliser 502 or slaked lime. Suggested EWC-code 11 01 09* Sludges and filter cakes containing dangerous substances.

Contaminated packing:

Rinse with plenty of water.

Additional information:

A filtration system for rinse water is recommended. Effluent must be separated and disposed of as acidic waste. Consult with your local authorized and licensed waste disposal agency and ministry of environment for instructions and procedures for approved waste disposal.

14. TRANSPORT INFORMATION

International regulations (UN)

UN-Classification No:

2922

Classification Code:

CT1

Proper shipping name:

CORROSIVE LIQUID, TOXIC N.O.S. (Hydrofluoric acid, nitric acid).



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Packaging group:

II

IMDG (Sea):

Class 8 (6.1) EmS F-A, S-B

ADR/RID (road, rail):

Class 8 (6.1)

IATA/DGR (air):

Class 8 (6.1)

Tunnel restriction code:

(E)

Additional information:

The product is to be transported according to dangerous goods regulations.

15. REGULATORY INFORMATION

Regulations

Hazard and safety information:

According to handling of dangerous goods.

Chemical Safety Assessment:

Has not been carried out for this product (or substances in the preparation).

Contents:

Nitric acid, hydrofluoric acid.

Hazard symbols:



Very Toxic Corrosive

Risk phrases:

R 26/27/28: Very toxic by inhalation, in contact with skin and if swallowed.

R 35: Causes severe burns.

Safety phrases:

S 1/2: Keep locked up and out of the reach of children.

S 7/47: Keep container tightly closed and at temperature not exceeding 30oC.

S 23: Do not breathe fumes.

S 26: In case of contact with eyes rinse immediately with plenty of water and seek medical advice.

S 28: After contact with skin, wash immediately with plenty of water or Avesta First Aid Spray.

S 36/37/39: Wear suitable protective clothing, gloves and eye/face protection.

S 45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 61: Avoid release to environment. Refer to special instructions/safety data sheet.

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Regulations:

KIFS 2005:7, (EG) 1272/2008, AFS 2005:17

16. OTHER INFORMATION

Training advice:

The Avesta Welding "Handbook for the pickling and cleaning of stainless steel" and "Guidelines for Planning and Designing a Pickling Workshop".

Recommended applications and restrictions:

Only for the pickling of stainless steel, not to be used on other metals.

Basic information sources used to draw up the information cards:

Standard Practice for cleaning stainless steel (ASTM-A-380),
Fluorides WHO (Env. Health Criteria 36), International Standard ISO 11014-11

The full texts of the R-phrases in section 3 are:

R 8: Contact with combustible material may cause fire.

R 26/27/28: Very toxic by inhalation, in contact with skin and if swallowed.

R 35: Causes severe burns.

Changes made since last version:

New layout and doc number

s. 3 – Nitric acid concentration interval changed

s. 14 - Tunnel restriction code, reference to regulations removed

s. 15 – Regulations updated

