

## 1. IDENTIFICATION OF PREPARATION AND COMPANY

### PRODUCT IDENTIFIER

**Trade name:** Avesta Pickling Gel 122  
Avesta Classic Pickling Gel 122

### RELEVANT IDENTIFIED USES AND USES ADVISED AGAINST

**Application and use:** Pickling/cleaning of stainless steel  
**Not to be use on** Other metals than stainless steel

### DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

**Manufacturer:** **Böhler Welding Group Nordic AB**  
Avesta Finishing Chemicals  
Lodgatan 14, 211 24 MALMÖ, Sweden  
Telephone: +46 (0)40 288 300  
E-mail: [safety@avestafinishing.com](mailto:safety@avestafinishing.com)

### EMERGENCY TELEPHONE NUMBER

+44 1 132 450 530 (Leeds)

### MISCELLANEOUS

**Issue date:** 2013-08-15  
**Version No:** 6  
**Valid from:** 2013-08-31

## 2. HAZARDS IDENTIFICATION

### CLASSIFICATION

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

Toxic by inhalation, contact with skin and if swallowed. It causes severe burns.

**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 formed.

### LABEL ELEMENTS

**Hazard symbols:**



Toxic



Corrosive

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**Risk phrases:**

R 23/24/25

R 35

**Safety phrases:**

S 1/2

S 7/47

S 23

S 26

S 28

S 36/37/39

S 45

S 61

**OTHER HAZARDS**

The mixture contains sulphates which in the acidic environment can form sulphuric acid.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**PREPARATION**

**Chemical identity:** Strong acid paste/solution with corrosive properties.

**INFORMATION ON IGREDIENTS**

CLASIFICACION ACCORDING TO REGULATION 67/548/EEG OR 1999/45/EG					
Hazardous components, chemical name, formula	CAS No.	EC No.	Contents weight-%	Hazard symbol/ Risk phrase*	
Nitric acid, HNO <sub>3</sub>	7697-37-2	231-714-2	15-25	O, C: R8, R35	
Hydrofluoric acid, HF	7664-39-3	231-634-8	2-6	T+, C: R26, 27, 28-35	
CLASIFICACION ACCORDING TO REGULATION (EG) no 1272/2008					
Hazardous components, chemical name, formula	CAS No.	EC No.	Contents weight-%	Hazard category	Hazard statements cod
Nitric acid, HNO <sub>3</sub>	7697-37-2	231-714-2	15-25	1 1A	H290 H314
Hydrofluoric acid, HF	7664-39-3	231-634-8	2-6	2 1 2 1A	H330 H310 H300 H314

\*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**

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**DESCRIPTION OF FIRST AID MEASURES AND INDICATION OF IMMEDIATE AND SPECIAL TREATMENT NEEDED****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 discomfort occurs.

**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, follow the instructions on the packaging. 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:**

Protect intact eye. Rinse immediately with plenty of water for at least 15 minutes and seek immediate medical care (eye specialist).

**Information for medical care:**

Inform the doctor that the injury has been caused by contact with hydrofluoric, sulphuric and nitric acid mixtures.

**SYMPTOMS ACUTE AND DELAYED**

Pain in the mouth, throat and breast may occur at inhalation. Salivation and easier dysphonia and discomfort feeling in the breast. In contact with the skin symptoms can be delayed.

**5. FIRE FIGHTING MEASURES****EXTINGUISHING MEDIA**

The most appropriate media to extinguish surrounding fire is water.

**SPECIAL HAZARDS ARISING FROM THE MIXTURE****Chemical exposure risks caused by released gases/vapours:**

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

**ADVICE FOR FIREFIGHTERS****Danger of fire/explosion:**

Fluid is non-flammable. Bottles close to fire should be removed or cooled with water.

**Protective clothing for firemen:**

Appropriate protective acid-resistant clothing should be used.

**Breathing protection:**

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

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**How to clean or destroy soiled fire equipment:**

Thoroughly wash with water.

**6. ACCIDENTAL RELEASE MEASURES****PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES****Personal precautions:**

Avoid direct contact. If there is still a risk of direct contact or stench protect with some form of acid-resistant material. Wear eye protection, skin protection, rubber gloves and breathing apparatus. Keep working area well ventilated.

**ENVIRONMENTAL PRECAUTIONS****Spillage (water, air, soil):**

Prevent spillage from entering sewage or public waters or nature.

**METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP****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 should be picked up and disposed of in full compliance with federal, state and local regulations as acid waste.

**REFERENCE TO OTHER SECTIONS**

Handling and storage section 7, exposure control/personal protection section 8 and disposal considerations section 13.

**7. HANDLING AND STORAGE****PRECAUTIONS FOR SAFE 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.

**CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES****Technical measures:**

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

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**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.

**Packaging materials:**

Package must be of acid resistant plastic material.

**SPECIFIC END USES**

See section 1. Contact the manufacturer for more information.

**8. EXPOSURE CONTROL/PERSONAL PROTECTION****CONTROL PARAMETERS****Hydrofluoric acid:**

EU: IOEL 1,5 mg/m<sup>3</sup> (8 hr), 2,5 mg/m<sup>3</sup> (15 min)

**Nitric acid:**

EU: IOEL 0,05 mg/m<sup>3</sup> (8 hr)

**Sulphuric acid:**

EU: IOEL 0,05 mg/m<sup>3</sup> thoracic fraction (8 hr)

**Chronic effects, inhalation:**

Exposure to strong inorganic acid mists containing sulphuric acid is known to be a human carcinogen, based on sufficient evidence of carcinogenicity from studies in humans.

**EXPOSURE CONTROLS****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**

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**INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES****Physical state (form, colour, smell) at 20°C:**

Transparent gel with a minor pungent smell.

**Boiling point:**

80-100°C

**Flash point / Explosion properties:**

Not applicable

**Specific temperatures:**

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

**Vapour pressure at 20°C:**

< 0.01 kPa

**pH:**

0 at 20°C

**Density:**

1.2-1.3 g/cm<sup>3</sup> at 20°C

**Solubility in water at 20°C:**

90 weight %

**10. STABILITY AND REACTIVITY****REACTIVITY**

Reacts vigorously with base metals and alkaline substances

**CHEMICAL STABILITY**

Stable under normal conditions.

**POSSIBILITY OF HAZARDOUS REACTIONS**

Polymerization will not occur

**CONDITIONS TO AVOID**

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

**INCOMPATIBLE MATERIALS**

Contact with low alloyed metals and alkaline compounds causes a heavy exothermic reaction with heat development and stench risk.

**HAZARDOUS DECOMPOSITION PRODUCTS**

Will emit nitrous gases, hydrofluoric acid and sulphuric oxides.

**11. TOXICOLOGICAL INFORMATION**

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**INFORMATION ON TOXICOLOGICAL 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 pulmonary oedema.

**Additional information:**

Symptoms will not appear immediately.

**OTHER RELEVANT INFORMATION****CMR-effects:**

Exposure to strong inorganic acid mists containing sulphuric acid is known to be a human carcinogen (IARC Group 1), based on sufficient evidence of carcinogenicity from studies in humans.

**12. ECOLOGICAL INFORMATION****TOXICITY (Hydrofluoric acid):**

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

LC50 Fish 96h: 441 mg/l (Gambusia affinis)

EC50 Daphnia 48h: 10-100 mg/l

IC50 Algae 72 h: 2 mg/l

**PERSISTENCE AND DEGRADABILITY**

Will be protolized in water to H<sup>+</sup>, NO<sup>-3</sup>, SO<sup>4-2</sup>, F<sup>-</sup>

**BIOACCUMULATIVE POTENTIAL**

The product is not regarded as bioaccumulative.

**MOBILITY IN SOIL**

The product is viscous and, after a period could hike down to the groundwater.

**RESULTS OF PBT AND vPvB ASSESSMENT**

Non-current

**OTHER ADVERSE EFFECTS**

Acute effects due to the lowering of pH and burns, i.e. there is a significant decrease in the number of algae at pH<6.

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### 13. DISPOSAL CONSIDERATIONS

#### WASTE TREATMENT METHODS

**Methods of disposal the 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:**

Upon neutralization of remaining acid rests and rinsing water can heavy metals precipitate and these constitute hazardous waste. Neutralise with Avesta Neutralising Agent 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:**

Effluent must be separated and disposed of as acidic waste. The product has in the undiluted form toxic effects on soil and water. The remaining acid rests and rinsing water can lower the pH value of wastewater and therefore should not be released until it has undergone a neutralization process.

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

**UN-Classification No:**

2922

**UN PROPPER SHIPPING NAME**

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

**TRANSPORT HAZARD CLASS(ES)**

**Classification Code:**

CT1

**PACKING GROUP**

II

**ENVIRONMENTAL HAZARDS**

**IMDG (Sea):**

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

Marine Pollutant: No

**ADR/RID (road, rail):**

Class 8 (6.1)

Tunnel restriction code:

(E)

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**IATA/DGR (air):**

Class 8 (6.1)

**ADDITIONAL INFORMATION**

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

**15. REGULATORY INFORMATION**

**SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS**

**Regulations:**

1907/2006/EC, 1272/2008/EC Table 3.1, 67/648/EEC, EWC 2000/532/EC

**Other regulations:**

IMDG

ADR/RID

IATA/DGR

**Chemical Safety Assessment:**

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

**16. OTHER INFORMATION**

**CHANGES MADE SINCE LAST VERSION**

Information on dual classification of elements in section 3, explanation of the hazard classes referred to in section 16.

**TRAINING ADVICE**

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

**KEY LITERATURE REFERENCES AND SOURCES FOR DATA**

Standard Practice for cleaning stainless steel (ASTM-A-380),

Fluorides WHO (Env. Health Criteria 36), International Standard ISO 11014-11

**LIST OF RELEVANT R- AND S-PHRASES, HAZARD CATEGORIES AND STATEMENTS CODES AS WELL AS PRECAUTIONARY STATEMENTS IN SECTION 2 AND 3.**

**Risk phrases:**

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 23/24/25: Toxic by inhalation, in contact with skin and if swallowed.

R 35: Causes severe burns.

**Hazard classes to the hazard categories and hazard statements codes**

**1/H310:** Fatal in contact with skin

**1/H290:** May be corrosive to metals

**1A/H314:** Causes severe skin burns and eye damage

**2/H330:** Fatal if inhaled

**2/H300:** Fatal if swallowed

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**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 30°C.

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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