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**Revision date:** 2005-02-18  
**In accordance with:** ISO 11014-1 and 2001/58/EC  
**Document:** I001007 Ver.11

## 1. IDENTIFICATION OF PREPARATION AND COMPANY

**Product identifier:** Pickling products for stainless steel  
**Manufacturer:** Avesta Welding AB, Finishing Chemicals  
 Lodgatan 14, 211 24 MALMÖ, Sweden  
 Telephone: +46 (0)226 82100  
**Application and use:** Pickling of stainless steel  
**Trade name:** Avesta GreenOne™ 120

### Emergency numbers

Australia	131126 (National) +61-2-98453111 (International)	Italy	+39-2-66101029 (Milan) +39-6-3054343 (Rome)
France	+33-1-40370404 (Paris) +33-4-72116911 (Lyon)	Spain	+34-91-5620420 (Madrid)
Finland	+358-(0)9-471977 (Helsinki)	Sweden	020-996000 (National) +46-8-331231 (International)
Germany	+49-89-19240 (Munich) +49-228-2873211 (Bonn)	UK	+44-1-132450530 (Leeds)
		USA	800-424-9300 (Chemtrack)

## 2. INFORMATION ON INGREDIENTS

### Preparation

**Chemical nature:** Green acid paste with corrosive properties.

Hazardous components, chemical name, formula	CAS No.	EEC No.	Contents weight-%	Risk Code/ R-phrase*
Nitric acid, HNO <sub>3</sub>	7697-37-2	231-714-2	8-14	O, C: R8, R35
Sulphuric acid, H <sub>2</sub> SO <sub>4</sub>	7664-93-9	231-639-5	8-14	C: R35
Hydrofluoric acid, HF	7664-39-3	231-634-8	<0,5	T+: R26, 27, 28-35

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

**Additional information:** Classification according to directive 67/548/EEG.

Symbols and risk phrases are for concentrated substances.

### 3. HAZARDS IDENTIFICATION

**Health hazard in case of accidental exposure (R-phrases):** R 20/ 21/ 22 Harmful by inhalation, in contact with skin and if swallowed. R35 Causes severe burns.

**Environmental effects:** Pickling Fluid will strongly reduce pH in water. Must be neutralised.

**Physical and chemical risks:** When heated nitrous gases can be developed. Only for treatment of stainless steel, not to be used on other metals.

### 4. FIRST AID MEASURES

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

**Inhalation:** Fresh air and rest. Rinse nose and mouth with water. Possibly breathing help, oxygen. Seek medical care even if only small troubles occur.

**Ingestion:** Drink at once, preferably milk or water. Thereafter 10-15 lime tablets dissolved in water. Do not cause vomiting. Seek medical care.

**Skin contact: Alternative A** - Rinse immediately with *Avesta First Aid Spray 910* (supplier Avesta Welding). Spray liberally onto the affected area, always using the complete content. Avoid rinsing with water first, as it reduces the effect of the solution. If not available, see alt. B.

**Alternative B** - Rinse immediately with plenty of water, then treat with 2.5% Calcium Gluconate gel.

**After alternative A and B seek medical help.**

**Eye contact:** Treat with *Avesta First Aid Spray 910* (supplier Avesta Welding). 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/sulphuric and nitric acid solutions. Anti-dote treatment after contact with hydrofluoric acid is HEXAFLUORINE®.

### 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:** Water, 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 in the presence of heat/fire.  
**Protective clothing for firemen:** Normal protective clothing.

**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 good ventilation.

**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.

### 7. HANDLING AND STORAGE

#### Handling

**Technical measures:** Working place and methods should be worked out in order to avoid direct contact. Keep good ventilation. 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* (supplier Avesta Welding) for both eyes and skin, should be available at the premises. Possibilities to rinse the eyes with water must be available at the working place.

#### Storage

**Technical measures:** Storage room should be kept separate, cool, dry 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.

**Packaging materials:** Packaging material must be of acid resistant plastic material.

**Shelf life:** At least 2 years in unopened bottle correctly stored.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering controls:** Adding Avesta Indicator 701 will reduce the formation of nitrous fumes. Local exhaust ventilation is recommended.

**Exposure limits:** Limiting values: CLV 1.7 mg/m<sup>3</sup> (8 hours), hydrofluoric acid LLV 5 mg/m<sup>3</sup> (15 min.), nitric acid.

### Chronic effects, inhalation:

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

### 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.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

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

Green paste 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:** 1.2-1.4 g/cm<sup>3</sup> at 20°C

### Viscosity 30 rpm at 23°C:

dynamic 1700-2300 mPa.s

kinematic 0.0013-0.0018 m<sup>2</sup>/s

**Solubility in water at 20°C:** 90 weight %

**Solubility in organic solvents:** Not applicable.

## 10. STABILITY AND REACTIVITY

**Stability:** Stable under normal conditions, polymerization 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 exothermic 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.

**Additional information:** Symptoms will not appear immediately.

## 12. ECOLOGICAL INFORMATION

### 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.

**Ecotoxicity Hydrofluoric acid:** Fish (fresh water), 60ppm, lethal (time period not specified).

**Persistence/degradability:** Will be protolized in water to H<sup>+</sup>, NO<sub>3</sub><sup>-</sup>, SO<sub>4</sub><sup>2-</sup>, F<sup>-</sup>.

**Bioaccumulation:** The product is not regarded as bioaccumulative.

### 13. DISPOSAL CONSIDERATIONS

#### Methods of disposal

**Waste from residues:** Contaminated residues i.e. wastewater must be neutralised to correct its pH-value to pH 6-11, and heavy metals resulting from the cleaning of stainless steel should be removed. Neutralise with Avesta Neutralising Agent or slaked lime.

**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

#### International regulations (UN)

UN-Classification No: 3264

**Proper shipping name:** Corrosive liquid, acidic, inorganic N.O.S. ( nitric acid, sulphuric acid)

**Packaging group:** II

**IMDG (Sea):** Class 8 EmS F-A, S-B

**ADR/RID (road, rail):** Class 8, II

**IATA/DGR (air):** Class 8 - 3264

**Additional information:** The product is to be transported according to dangerous goods regulations.

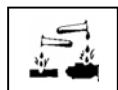
### 15. REGULATORY INFORMATION

#### Regulations

#### Hazard and safety information:

According to handling of dangerous goods.

#### Danger symbols:



Corrosive

#### Sentences expressing the risks

**R 20/21/22:** Harmful by inhalation, in contact with skin and if swallowed.

**R 35:** Causes severe burns.

#### Sentences about safety measures

**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.

### 16. OTHER INFORMATION

**Training advice:** The Avesta Finishing Chemicals "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, Commission Directive 2001/58/EC

#### The full texts of the R-phrases in section 2 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:

2004-09-20: Changed risk phrase from R34 to R35

2005-02-18: section 8, added text regarding cronic effects of mist.