

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

TACAB Optima Pickling Paste

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Pickling of stainless steel and Ni-based alloys

### 1.3 Details of the supplier of the safety data sheet

TA Chemistry AB

*Address:* Tierpsvägen 2, 815 75 Söderfors, Sweden

*Telephone no.:* +46 (0)293-308 85

*E-mail:* contact@tchemistry.se

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*Contact:* Raymond Palm

### 1.4 Emergency telephone number

Daytime ( 08.00-16.00): +46 (0)293-308 85

Other times: +46 (0) 70-236 78 32

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

*Classification according to Directive 1999/45/EG (Preparations Directive) 1)*

Toxic; T; R23/24/25

Corrosive; C; R35

*Classification of the substance under regulation (EG) nr 1272/2008 (CLP) 1)*

Not available.

<sup>1)</sup> For an explanation of abbreviations/codes for classification in plain language, see Section 16.

### 2.2 Label elements

Hazard symbol



Toxic



Corrosive

Risk phrases:

**R23/24/25:** Toxic by inhalation, in contact with skin and if swallowed.

**R34:** Causes burns.

Safety advice

phrases :

**S7/9:** Keep container tightly closed and in a well-ventilated place.

**S26:** In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

**S36/37/39:** Wear suitable protective clothing, gloves and eye/face protection.

**S38:** In case of insufficient ventilation, wear suitable respiratory

equipment.

**S45:** In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Contents:

1-4% nitric acid, 1-3% hydrofluoric acid, 15-20% phosphoric acid

### 2.3 Other hazards

The mixture does not meet the criteria for persistent, bioaccumulative and toxic substances (PBT) or very persistent and very bioaccumulative substances (vPvB).

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Namn:	CAS-nr:	EG-nr:	REACH regnr:	Content %:	Classification (Dangerous Substances Directive) 1):	Classification (CLP) <sup>1)</sup> :
Nitric acid	7697-37-2	231-714-2	not available	1-4	O; R8 C; R35	Ox. Liq. 3; H272 Skin Corr. 1A; H314
Hydrofluoric acid	7664-39-3	231-634-8	not available	1-3	T+; R26/27/28 C; R35	Acute Tox. 2; H330 Acute Tox. 1; H310 Acute Tox. 2; H300 Skin Corr. 1A; H314
Phosphoric acid	<b>7664-38-2</b>	<b>231-633-2</b>	not available	15-20	C; R34	Skin Corr. 1A; H314

<sup>1)</sup> For an explanation of codes for classification, see Section 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

Inhalation	Rinse nose and mouth with water. Supply fresh air and keep victim warm and calm. Give artificial respiration or oxygen if victim is breathing irregularly or breathing has stopped. Obtain medical assistance immediately..
Skin contact	Remove urgently contaminated clothing and shoes. Rinse immediately with Hexafluorine® on the affected area. Avoid rinsing with water first, as it reduces the effect of the solution. For prolonged or greater exposure then use 2,5% Calcium Gluconate gel on the affected area. Obtain medical assistance immediately  ...If not hexafluorine and Calcium Gluconate gel are available: Wash off immediately using water and soap and rinse well. Rinse skin with plenty of water. Obtain medical assistance immediately
Eye contact	Rinse immediately with Hexafluorine and remove any contact lenses. Avoid rinsing with water first, as it reduces the effect of the solution. Obtain medical assistance immediately (eye doctor).  ...If not Hexafluorine is available rinse open eyes in running water for at least 15-30 minutes. Keep eyelids open. Remove any contact lenses. Obtain medical assistance immediately. Continue to rinse the eyes under transport to eye doctor.
Ingestion	Rinse mouth with water. Drink immediately a glass of milk or water. Do not induce vomiting. Let the injured rest. Obtain medical assistance immediately (show the label where possible).

### 4.2 Most important symptoms and effects, both acute and delayed

**EYE CONTACT:** Splashes cause intensive pain and a strong corrosive effect. Risk of irreparable damage to the eyes.

**SKIN CONTACT:** Causes corrosive damages with intensive pain with blisters and slow-healing wounds. Symptoms may appear after several hours. Even dilute solutions can cause severe burns, but does not always provide immediate pain. Sometimes the pain occurs only after several hours when hydrofluoric acid penetrates into the underlying tissues

**INHALATION:** Corrosive to mouth, throat and teeth and may cause aches, cough and difficulty in breathing. Pulmonary oedema can arise several hours up to several days without inconvenience.

**INGESTION:** Gives severe burns in mouth and throat. Even small quantities can cause corrosion injuries.

#### 4.3 Indication of any immediate medical attention and special treatment needed

Calcium gluconate gel 2.5 % precipitates fluoride and must be massaged into the skin areas that have been in contact with the product as soon as possible. At high exposures, additional calcium may need to be given, both locally and systemically. If splashes to the eyes occur, calcium gluconate solution can also be dropped into the eye. Consider the risk of secondary renal failure after ingestion.

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

Foam, carbon dioxide, powder or sand. Use any media appropriate depending on the environment. The product is non-flammable.

#### 5.2 Special hazards arising from the substance or mixture

Cool packages with water and remove from fire if possible. Do not breathe fumes. Heated packages could explode due to the build up of pressure. Contact with metals may produce hydrogen gas in small amounts, which together with air can give an explosion. The product can emit nitrous gases in the presence of fire.

#### 5.3 Advice for firefighters

Use breathing apparatus with a gas filter type B and a dust filter type P2, and protective clothing.

### SECTION 6: Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

Wear suitable protective gloves, eye protection and protective clothing. Keep good ventilation or use breathing apparatus with a gas filter type B and a dust filter type P2. Block of the danger zone if possible.

#### 6.2 Environmental precautions

Prevent spillage from entering sewage, ditches or public waters.

#### 6.3 Methods and material for containment and cleaning up

Neutralize with slaked lime. Small spills can be neutralized with TACAB Neutralisation paste. Embank with inert material, e.g. sand. Spillage should be picked up and disposed in full compliance with local regulations as hazardous waste. Rinse area with plenty of water. Prevent incompatible substances (see Section 10) from coming into contact with the product. For larger spills/releases notify the Emergency Services.

#### 6.4 Reference to other sections

See section 1 for Emergency telephone number, section 8 for personal protection and section 13 for waste treatment methods.

### SECTION 7: Handling and storage

#### 7.1 Precautions for safe handling

Handle the product with care and avoid contamination. The product is to be used at temperatures between +5°C and +40°C. When pickling this requires very good ventilation or local extraction. Wear personal protective equipment (see Section 8). Avoid direct contact with, or inhalation of the product. Do not eat, drink or smoke when using this product. An eyewash station and emergency shower must be made available. Calcium gluconate gel 2.5 % or Hexafluorine ® should be available at the workplace. Pickling products should only be handled by staff with basic training/knowledge in the relevant health risks.

#### 7.2 Conditions for safe storage, including any incompatibilities

Keep packages securely closed in a well-ventilated area. Store packages indoor at room temperature in upright position and away from incompatible materials, see section No. 10. Storage should be in a restricted area, with no access for unauthorized persons. The shelf life of an un-opened package is 3 years

#### 7.3 Specific end use(s)

Not applicable.

## SECTION 8: Exposure controls/personal protection

### Exposure controls/personal protection

#### 8.1 Control parameters

Occupational exposure limits (Source: GESTIS International limit values database via [www.dguv.de/ifa/en/gestis/limit\\_values/index.jsp](http://www.dguv.de/ifa/en/gestis/limit_values/index.jsp) and further international OELs).

Substance:	Country	Limit value (8 hours) mg/m <sup>3</sup>	Limit value short term mg/m <sup>3</sup>	Remarks
Nitric acid	Austria	5,2	10	
	Belgium	2,6		
	Denmark	5,0	10	
	European Union		2,6	Indicative Occupational Exposure Limit Values and Limit Values for Occupational
	Finland	1,3	2,6(1)	HPT values, (1) 15 min limit value
	France		2,6	Exposure. Indicative statutory limit values 15 minutes average value
	Germany(AGS)		2,6	
	Germany(DFG)			
	Hungary		2,6	
	Italy		2,6	
	Latvia		2,6 (1)	(1) 15 minutes average value
	Norway	5		
	Poland		2,6	
	Spain	5	2,6	
	Sweden	5	13 (1)	(1) Short-term value, 15 minutes average value
	Switzerland		5	
Netherlands		1,3		
United Kingdom		2,6		
Substance:	Country	Limit value (8 hours) mg/m <sup>3</sup>	Limit value short term mg/m <sup>3</sup>	Remarks
Hydrofluoric acid	Austria	1,5	2,5	
	Belgium	1,5	2,5	
	Denmark	1,5	3	
	European Union	1,5	2,5	Indicative Occupational Exposure Limit Values and Limit Values for Occupational Exposure.
	Finland	1,5	2,5(1)	HPT values, (1) 15 min limit value
	France	1,5	2,5	Restrictive statutory limit values.
	Germany(AGS)	0,83	1,66 (1)	(1) 15 Minutes average value
	Germany(DFG)	0,83	1,66 (1)	(1) STV 15 minutes average value
	Hungary	1,5	2,5	
	Italy	1,5	2,5	
	Latvia	1,5	2,5 (1)	1) 15 minutes average value
	Norway	0,5		
	Poland	0,5	2,0	
	Spain	1,5	2,5	
	Sweden		1,7 (1)	(1) Ceiling limit value
	Switzerland	0,83	1,66	
Netherlands		1,0		
United Kingdom	1,5	2,5		
Substance:	Country	Limit value (8 hours) mg/m <sup>3</sup>	Limit value short term mg/m <sup>3</sup>	Remarks
Phosphoric acid	Austria	1,0	2,0	Inhalable aerosol
	Belgium	1,0	2,0	
	Denmark	1,0	2,0	
	European Union	1,0	2,0	Thoracic fraction, indicative occupational exposure limit values and limit values for occupational exposure
	Finland	1,0	2,0	
	France	1,0	2,0	Thoracic fraction
	Germany(AGS)	2,0 (1)	4,0 (1,2)	(1) Inhalable aerosol, (2) 15 minutes average value
	Germany(DFG)	2,0	4,0	Inhalable aerosol, STV 15 minutes average value
	Hungary	1,0	2,0	STV 15 minutes average value
	Italy	1,0	2,0	
	Norway	1,0		
	Poland	1,0	2,0	
	Spain	1,0	2,0	
	Sweden	1,0	3,0 (1)	(1) Short-term value, 15 minutes average value
	Switzerland	1,0	2,0	Inhalable aerosol
	Netherlands	1,0	2,0	Thoracic aerosol
United Kingdom	1,0	2,0		

#### Threshold limit values – ACGIH 2012

	Nitric Acid	Hydrofluoric acid	Phosphoric acid
TLV	2 ppm	0.5 ppm	1,0 mg/m <sup>3</sup>

## 8.2 Exposure controls

### Appropriate engineering controls

Keep exposure at a low level through good ventilation and appropriate handling regulations. Mechanical ventilation or local extraction should be used. Eyewash and quick-drench shower facilities must be available at the premises. 2,5% Calcium Gluconate gel or Hexafluorine® should be available in the working place. Wash your hands and face before all meals and after work.

### Individual protection measures, such as personal protective equipment:

#### Eye protection / Face protection

Use eye and skin protection.

#### Hand protection

Wear gloves of natural rubber or neoprene.

#### Skin protection

Wear protective clothing and boots of acid resistant materials.

#### Respiratory protection

Use breathing apparatus with a gas filter type B and a dust filter type P2

#### Environmental protection measures

Prevent spillage from entering sewage or public waters.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

<b>Appearance:</b>	Highly viscous, gel-like fluid, colourless	<b>Vapour pressure</b>	Not determined
<b>Odour:</b>	Pungent	<b>Vapour density</b>	Not determined
<b>Odour threshold:</b>	Not determined	<b>Relative density:</b>	1,22 g/cm <sup>3</sup> (vid 20 °C)
<b>pH-value:</b>	<1,5(10 g/l)	<b>Solubility:</b>	Fully soluble and miscible
<b>Melting / freezing point:</b>	Not determined	<b>Partition coefficient (n-octanol/water):</b>	Not applicable
<b>Boiling point</b>	about 110 °C	<b>Self ignition temperature:</b>	Not self-igniting
<b>Flash-point:</b>	Not relevant	<b>Decomposition temperature:</b>	Not determined
<b>Evaporation rate:</b>	Not determined	<b>Viscosity:</b>	Not determined
<b>Flammability:</b>	Nonflammable	<b>Explosive properties:</b>	non explosive
<b>Upper/lower flammability or explosive limits:</b>	Not relevant	<b>Oxidizing properties:</b>	not oxidizing

### 9.2 Other information

No additional information.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

The mixture consists of strong acids that may be reactive with certain substances.

### 10.2 Chemical stability

Stable under normal conditions. (see section7).

### 10.3 Possibility of hazardous reactions

Reacts violently with various forms of lye.

Contact with metals (see 10.5) will form hydrogen gas, which together with air can give an explosion.

### 10.4 Conditions to avoid

Heating and direct sunlight.

### 10.5 Incompatible materials

Bases, metals (aluminium, zinc, iron, magnesium)

### 10.6 Hazardous decomposition products

The product contains nitric acid which releases nitrous gases when burned.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

Route of exposure	Effects
Eye Contact	Gives intensive pain and a strong corrosive effect. High risk of permanent visual impairment or blindness.
Skin contact:	Gives corrosive damages with intensive pain with blisters and slow-healing wounds. Diluted solutions can also produce severe burns, but without causing immediate pain. Sometimes pain may be felt several hours later when hydrofluoric acid has penetrated into underlying tissues.
Inhalation:	Inhalation of fumes or mist is corrosive to mouth and throat. Effusion in the lungs (pulmonary edema) may occur after several hours or up to a few days without any problems. Prolonged and repeated contact with vapours may cause chronic bronchitis and erosion of the teeth.
Ingestion:	Gives corrosive damage with burning pain in mouth and throat. Even small quantities can cause corrosion injuries. High risk of permanent inconvenience from scar healing caused by corrosion damage in throat or stomach.

<b>Acute toxicity:</b>	Hydrofluoric acid: LC <sub>50</sub> inhalation rat, 1h: 1310 ppm Phosphoric acid: LC <sub>50</sub> oral rat: 1530 mg/kg
<b>Corrosive/ Frätande/Irritating:</b>	Corrosive
<b>Sensitization:</b>	None known.
<b>Toxicitet vid upprepad dosering:</b>	None known.
<b>Carcinogenicity</b>	None known.
<b>Mutagenicity</b>	None known.
<b>Reproductive toxicity</b>	None known.

## SECTION 12: Ecological information

### 12.1 Toxicity

Nitric acid:	LC50, fish, 96h: 72 mg/l (Gambusia affinis)
Hydrofluoric acid:	LC50, fish, 96h: 51 mg/l (Oncorhynchus mykiss), EC50, daphnia, 48h: 97 mg/l, EC50, algae, 96h: 43 mg/l (Scenedesmus subspicatus)
Phosphoric acid:	LC50, fish, 96h: 138 mg/l

The acute effects of the product are largely a consequence of a lowered pH value and the resulting burns.

### 12.2 Persistence and degradability

Criteria for biodegradability are not applicable to inorganic compounds.  
Will be protolized to H<sup>+</sup>, NO<sub>3</sub><sup>-</sup> and F<sup>-</sup>

### 12.3 Bioaccumulative potential

Not bio accumulative.

### 12.4 Mobility in soil

No data available.

### 12.5 Results of PBT and vPvB assessment

The contents of the product do are not expected to be persistent, bioaccumulative and toxic substances (PBT) or very persistent and very bioaccumulative substances (vPvB).

### 12.6 Other adverse effects

No other adverse effects are known.

**SECTION 13: Disposal considerations****13.1 Waste treatment methods**

Spillages and residues of this product and contaminated packaging must be disposed of as hazardous waste. Waste from products must not be allowed to contaminate soil or water, or be released into the environment. Consult the local authorities for information on the disposal of waste.

**SECTION 14: Transport information**

14.1 UN number	UN 2922
14.2 UN proper shipping name	Corrosive liquid, toxic, n.o.s. (hydrofluoric acid, nitric acid)
14.3 Transport hazard class(es)	8 (6.1)
14.4 Packing group	II
14.5 Environmental hazards	No
14.6 Special precautions for user	No special precautions beyond the current regulations for the transportation of dangerous goods.
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not relevant.

**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

No specific.

**15.2 Chemical safety assessment**

Not available.

**SECTION 16: Other information****Codes for classification in sections 2 and 3:**

O: oxidizing T+: very toxic T: Toxic C: Corrosive

R8: Contact with combustible material may cause fire

R26/27/28 Very toxic by inhalation, in contact with skin and if swallowed

R23/24/25: Toxic by inhalation, in contact with skin and if swallowed.

R35: Causes severe burns

Ox. Liq. 3: Oxidizing liquids Category 3, Acute Tox 1: Acute toxicity category 1 Acute Tox 2: Acute toxicity category 2

Skin Corr. 1A: Skin corrosion category 1A

H272: May intensify fire; oxidiser. H300: Fatal if swallowed H310: Fatal in contact with skin H330: Fatal if inhaled H314:

Causes severe skin burns and eye damage

**Changes following the latest review:**

The safety data sheet has been revised in each section in accordance with the amendment to the regulation REACH (EC) no. 453/2010. This safety data sheet supersedes all previous editions.

**Other information:**

TA Chemistry AB request the users of this product to study this Safety Data Sheet (S.D.S.) and become aware of product hazards and safety information. To promote safe use of this product a user should:

- notify its employees, agents and contractors of the information on this S.D.S and any product hazards/safety information.

- furnish this same information to each of its customers for the product

- request such customers to notify employees and customers for the same product hazards and safety

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