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

1.1 Product identifier

Ätzmittel V2A-Beize
Article number 17 00 13

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

1.2.1 Relevant uses

Etchant for metallographic specimens.

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company

ITW Test & Measurement GmbH
Boschstraße 10
73734 Esslingen a. Neckar / GERMANY
Phone 0800 707 6273
Fax 0800 707 6274
Homepage www.buehler-met.de
E-mail info.uk@buehler.com

Address enquiries to

Technical information info.uk@buehler.com

Safety Data Sheet sdb@chemiebuero.de

1.4 Emergency telephone number

Company 0800 707 6273 (Only valid if dialled within the UK) +49 (0) 711 4904690-0

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Skin Corr. 1B: H314 Causes severe skin burns and eye damage.
Eye Dam. 1: H318 Causes serious eye damage.
STOT SE 3: H335 May cause respiratory irritation.
Met. Corr. 1: H290 May be corrosive to metals.

2.2 Label elements

The product is classified and required to be labelled in accordance with EC-Directives

Hazard pictograms

Signal word DANGER

Contains: Nitric acid

Hydrochloric acid

Hazard statements

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

Precautionary statements

P260 Do not breathe vapours / spray.
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 / shower.
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.

2.3 Other hazards

Physico-chemical hazards Corrosive effects to metals.

Environmental hazards Does not contain any PBT or vPvB substances.

Other hazards Further hazards were not determined with the current level of knowledge.

SECTION 3: Composition / Information on ingredients

Product-type:

The product is a mixture.

Range [%]	Substance
15 - 20	Hydrochloric acid
	CAS: 7647-01-0, EINECS/ELINCS: 231-595-7, EU-INDEX: 017-002-01-X, Reg-No.: 01-2119484862-27-XXXX
	GHS/CLP: Skin Corr. 1B: H314 - STOT SE 3: H335 - Met. Corr. 1: H290
1 - <5	Nitric acid
	CAS: 7697-37-2, EINECS/ELINCS: 231-714-2, EU-INDEX: 007-004-00-1, Reg-No.: 01-2119487297-23-XXXX
	GHS/CLP: Skin Corr. 1A: H314 - Ox. Liq. 3: H272 - Met. Corr. 1: H290

Comment on component parts Substances of Very High Concern - SVHC: substances are not contained or are below 0,1%.
For full text of H-statements: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information Take off contaminated clothing and wash before reuse.

Inhalation Remove person to fresh air and keep comfortable for breathing.
In the event of symptoms seek medical treatment.

Skin contact In case of contact with skin wash off immediately with soap and water.
Immediate medical treatment necessary, as untreated burns can result in slow-healing wounds.

Eye contact Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Get medical advice.

Ingestion Consult a doctor immediately.
Do not induce vomiting.
Rinse out mouth and give plenty of water to drink.
Do not attempt to neutralize.

4.2 Most important symptoms and effects, both acute and delayed

Headache
Gastro-intestinal complains.
Product is caustic.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media Product itself is non-combustible. Fire extinguishing method of surrounding areas must be considered.

Extinguishing media that must not be used Full water jet.

5.2 Special hazards arising from the substance or mixture

Risk of formation of toxic pyrolysis products.
Nitrogen oxides (NOx).
Chlorine compounds.

5.3 Advice for firefighters

Use self-contained breathing apparatus.
Wear full protective suit.

Fire residues and contaminated firefighting water must be disposed of in accordance within the local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.
Use personal protective equipment (protective gloves, safety glasses, protective clothing).

6.2 Environmental precautions

Prevent spread over a wide area (e.g. by containment or oil barriers).
Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up

Take up with absorbent material (e.g. acid binder).
Dispose of absorbed material in accordance within the regulations.

6.4 Reference to other sections

See SECTION 8+13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Provide suitable vacuuming at the processing machines.

Take off contaminated clothing and wash before reuse.
Do not eat, drink, smoke or take drugs at work.
After worktime and before work breaks the affected skin areas must be thoroughly cleaned.
Use barrier skin cream.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.
Provide acid-resistant floor.
Prevent penetration into the ground.

Do not store with alkalies.
Do not store together with food and animal food/diet.

Keep container tightly closed.
Keep container in a well-ventilated place.
Protect from heat/overheating.

7.3 Specific end use(s)

See product use, SECTION 1.2

SECTION 8: Exposure controls / personal protection

8.1 Control parameters

Ingredients with occupational exposure limits to be monitored (GB)

Substance
Hydrochloric acid
CAS: 7647-01-0, EINECS/ELINCS: 231-595-7, EU-INDEX: 017-002-01-X, Reg-No.: 01-2119484862-27-XXXX
Long-term exposure: 1 ppm, 2 mg/m³, gas and aerosol mists
Short-term exposure (15-minute): 5 ppm, 8 mg/m³
Nitric acid
CAS: 7697-37-2, EINECS/ELINCS: 231-714-2, EU-INDEX: 007-004-00-1, Reg-No.: 01-2119487297-23-XXXX
Short-term exposure (15-minute): 1 mg/m³, 2,6

Ingredients with occupational exposure limits to be monitored (EU)

Substance / EC LIMIT VALUES
Hydrochloric acid
CAS: 7647-01-0, EINECS/ELINCS: 231-595-7, EU-INDEX: 017-002-01-X, Reg-No.: 01-2119484862-27-XXXX
Eight hours: 5 ppm, 8 mg/m³
Short-term (15-minute): 10 ppm, 15 mg/m³
Nitric acid
CAS: 7697-37-2, EINECS/ELINCS: 231-714-2, EU-INDEX: 007-004-00-1, Reg-No.: 01-2119487297-23-XXXX
Short-term (15-minute): 1 ppm, 2,6 mg/m³

DNEL

Substance
Hydrochloric acid, CAS: 7647-01-0
Industrial, inhalative, Long-term - local effects: 8 mg/m³.
Industrial, inhalative, Acute - local effects: 15 mg/m³.

PNEC

Substance
Hydrochloric acid, CAS: 7647-01-0
sewage treatment plants (STP), 0,036 mg/l.
seawater, 0,036 mg/l.
freshwater, 0,036 mg/l.

8.2 Exposure controls

Additional advice on system design	Ensure adequate ventilation on workstation.
Eye protection	Tightly fitting goggles. (EN 166:2001)
Hand protection	Butyl rubber, >480 min (EN 374). The details concerned are recommendations. Please contact the glove supplier for further information.
Skin protection	Acid-resistant protective clothing.
Other	Avoid contact with eyes and skin. Do not inhale gases/vapours/aerosols. Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity handled. The resistance of this equipment to chemicals should be ascertained with the respective supplier.
Respiratory protection	Breathing apparatus in the event of high concentrations. Short term: filter apparatus, combination filter E-P2 (DIN EN 14387)
Thermal hazards	none
Delimitation and monitoring of the environmental exposition	Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid
Color	colourless yellowish
Odor	characteristic
Odour threshold	No information available.
pH-value	strongly acidic
pH-value [1%]	No information available.
Boiling point [°C]	No information available.
Flash point [°C]	No information available.
Flammability (solid, gas) [°C]	not applicable
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Oxidising properties	no
Vapour pressure/gas pressure [kPa]	No information available.
Density [g/ml]	~ 1,10 (20 °C / 68,0 °F)
Bulk density [kg/m³]	not applicable
Solubility in water	miscible
Partition coefficient [n-octanol/water]	No information available.
Viscosity	not applicable
Relative vapour density determined in air	No information available.
Evaporation speed	No information available.
Melting point [°C]	No information available.
Autoignition temperature [°C]	not applicable
Decomposition temperature [°C]	No information available.

9.2 Other information

none

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reactions known if used as directed.

10.2 Chemical stability

Stable under normal ambient conditions (ambient temperature).

10.3 Possibility of hazardous reactions

Reactions with alkalies (lyes).
Corrosive to metals.

10.4 Conditions to avoid

See SECTION 7.2.

10.5 Incompatible materials

See SECTION 10.3.

10.6 Hazardous decomposition products

Nitrous gases.
Chlorine compounds.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Substance
Hydrochloric acid, CAS: 7647-01-0
LD50, oral, Rabbit: 900 mg/kg.
LD50, dermal, Rabbit: > 5010 mg/kg.
LC50, inhalativ (gas), Rat: 4701 ppm/30min.
LC50, inhalativ (gas), Rat: 40989 ppm/5min.
LC50, inhalative, Rabbit: 4,2 - 4,7 mg/l 1h.

Serious eye damage/irritation	Product is caustic.
Skin corrosion/irritation	Product is caustic.
Respiratory or skin sensitisation	Based on available data, the classification criteria are not met.
Specific target organ toxicity — single exposure	May cause damage to organs through single exposure.
Specific target organ toxicity — repeated exposure	Based on available data, the classification criteria are not met.
Mutagenicity	Based on available data, the classification criteria are not met.
Reproduction toxicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.
General remarks	

Toxicological data of complete product are not available.
The product was classified on the basis of the calculation procedure of the preparation directive.
The toxicity data listed pertaining to the ingredients are intended for those working in the medicinal professions, experts for occupational health and safety and toxicologists. The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

SECTION 12: Ecological information

12.1 Toxicity

Substance
Hydrochloric acid, CAS: 7647-01-0
LC50, (96h), Lepomis macrochirus: 24,6 mg/l.

12.2 Persistence and degradability

Behaviour in environment compartments	No information available.
Behaviour in sewage plant	Neutralization is normally necessary before a waste water is discharged into sewage treatment plants.
Biological degradability	The methods for determining the boilogical degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

Based on all available information not to be classified as PBT or vPvB respectively.

12.6 Other adverse effects

Harmful effect due to pH shift.
No classification on the basis of the calculation procedure of the preparation directive.
The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

Product

Coordinate disposal with the authorities if necessary.

Waste no. (recommended) 060102*
060105*

Contaminated packaging

Packaging that cannot be cleaned should be disposed of as for product.
Uncontaminated packaging may be taken for recycling.

Waste no. (recommended) 150110*
150101
150102
150104

SECTION 14: Transport information

14.1 UN number

Transport by land according to ADR/RID 3264

Inland navigation (ADN) 3264

Marine transport in accordance with IMDG 3264

Air transport in accordance with IATA 3264

14.2 UN proper shipping name

Transport by land according to ADR/RID	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid, Hydrochloric acid)
- Classification Code	C1
- Label	
- ADR LQ	1 l
- ADR 1.1.3.6 (8.6)	Transport category (tunnel restriction code) 2 (E)
Inland navigation (ADN)	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid, Hydrochloric acid)
- Classification Code	C1
- Label	
Marine transport in accordance with IMDG	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid, Hydrochloric acid)
- EMS	F-A, S-B
- Label	
- IMDG LQ	1 l
Air transport in accordance with IATA	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid, Hydrochloric acid solution)
- Label	

14.3 Transport hazard class(es)

Transport by land according to ADR/RID	8
Inland navigation (ADN)	8
Marine transport in accordance with IMDG	8
Air transport in accordance with IATA	8

14.4 Packing group

Transport by land according to ADR/RID	II
Inland navigation (ADN)	II
Marine transport in accordance with IMDG	II
Air transport in accordance with IATA	II

14.5 Environmental hazards

Transport by land according to ADR/RID	no
Inland navigation (ADN)	no
Marine transport in accordance with IMDG	no
Air transport in accordance with IATA	no

14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

not determined

SECTION 15: Regulatory information

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

EEC-REGULATIONS	1991/689 (2001/118); 1999/13; 2004/42; 648/2004; 1907/2006 (REACH); 1272/2008; 75/324/EEC (2008/47/EC); 453/2010/EC; (EU) 2015/830
TRANSPORT-REGULATIONS	DOT-Classification, ADR (2015); IMDG-Code (2015, 37. Amdt.); IATA-DGR (2015).
NATIONAL REGULATIONS (GB):	EH40/2005 Workplace exposure limits (Second edition, published December 2011). CHIP 3/ CHIP 4
- Observe employment restrictions for people	Observe employment restrictions for mothers-to-be and nursing mothers. Observe employment restrictions for young people.
- VOC (1999/13/CE)	<1%

15.2 Chemical safety assessment

not applicable

SECTION 16: Other information

16.1 Hazard statements (SECTION 03)

H272 May intensify fire; oxidiser.
H290 May be corrosive to metals.
H335 May cause respiratory irritation.
H314 Causes severe skin burns and eye damage.

16.2 Abbreviations and acronyms:

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses
ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
CAS = Chemical Abstracts Service
CLP = Classification, Labelling and Packaging
DMEL = Derived Minimum Effect Level
DNEL = Derived No Effect Level
EC50 = Median effective concentration
ECB = European Chemicals Bureau
EEC = European Economic Community
EINECS = European Inventory of Existing Commercial Chemical Substances
ELINCS = European List of Notified Chemical Substances
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IC50 = Inhibition concentration, 50%
IMDG = International Maritime Code for Dangerous Goods
IUCLID = International Uniform ChemicaL Information Database
LC50 = Lethal concentration, 50%
LD50 = Median lethal dose
MARPOL = International Convention for the Prevention of Marine Pollution from Ships
PBT = Persistent, Bioaccumulative and Toxic substance
PNEC = Predicted No-Effect Concentration
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
TLV®/TWA = Threshold limit value – time-weighted average
TLV®STEL = Threshold limit value – short-time exposure limit
VOC = Volatile Organic Compounds
vPvB = very Persistent and very Bioaccumulative

16.3 Other information

Classification procedure

Skin Corr. 1B: H314 Causes severe skin burns and eye damage. (Calculation method)
Eye Dam. 1: H318 Causes serious eye damage. (Calculation method)
STOT SE 3: H335 May cause respiratory irritation. (Calculation method)
Met. Corr. 1: H290 May be corrosive to metals. (Calculation method)

Modified position

SECTION 2 been added: H318 Causes serious eye damage.

SECTION 2 been added: Eye Dam. 1

SECTION 5 been added: Chlorine compounds.

SECTION 8 been added: Acid-resistant protective clothing.

SECTION 8 deleted: Light protective clothing of plastic material.

SECTION 9 deleted: not determined

SECTION 9 been added: No information available.

SECTION 10 been added: Chlorine compounds.

SECTION 11 been added: May cause damage to organs through single exposure.

SECTION 11 deleted: not determined

SECTION 11 been added: Product is caustic.

SECTION 11 deleted: not determined

SECTION 11 been added: Based on available data, the classification criteria are not met.

SECTION 11 deleted: not determined

SECTION 12 been added: No information available.

SECTION 12 been added: The methods for determining the boilogical degradability are not applicable to inorganic substances.

SECTION 12 been added: Neutralization is normally necessary before a waste water is discharged into sewage treatment plants.

SECTION 12 deleted: not determined

SECTION 16 been added: Calculation method