

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 08.05.2019

Version number 8

Revision: 08.05.2019

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

· **Product identifier**

· **Trade name:** ICP standard, vanadium

1.000 g V/l

as V2O5 in nitric acid 1 mol/l

traceable to NIST



· **Article number:** 03784

· **Registration number** inapplicable, this product is a mixture

· **Relevant identified uses of the substance or mixture and uses advised against**

No further relevant information available.

· **Application of the substance / the mixture**

Chemical intermediate

Laboratory chemicals

· **Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

Bernd Kraft GmbH

Stempelstraße 6

D-47167 Duisburg

produktsicherheit@berndkraft.de

Tel.: (+49)0203/5194-0

Fax : (+49)0203/5194-290

· **Further information obtainable from:** Product safety department

· **Emergency telephone number:**

For Hazardous Materials [or Dangerous Goods] Incidents

Spill, Leak, Fire, Exposure, or Accident

Call CHEMTREC Day or Night

Within USA and Canada: 1-800-424-9300

Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

2 Hazards identification

· **Classification of the substance or mixture**



corrosion

Met. Corr.1 H290 May be corrosive to metals.

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.

· **Label elements**

· **GHS label elements**

The product is classified and labelled according to the Globally Harmonised System (GHS).

· **Hazard pictograms**



GHS05

· **Signal word** Danger

· **Hazard-determining components of labelling:**

nitric acid

(Contd. on page 2)

GB

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(Contd. of page 1)

· **Hazard statements**

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

· **Precautionary statements**

P260 Do not breathe dusts or mists.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

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.

P321 Specific treatment (see on this label).

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Additional information:**

EUH071 Corrosive to the respiratory tract.

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterisation: Mixtures**

· **Description:** Mixture of substances listed below with nonhazardous additions.

· **Dangerous components:**

CAS: 7697-37-2 EINECS: 231-714-2	nitric acid Ox. Liq. 2, H272; Acute Tox. 3, H331; Met. Corr. 1, H290; Skin Corr. 1A, H314; Eye Dam. 1, H318	5-10%
CAS: 1314-62-1 EINECS: 215-239-8	vanadium pentoxide Muta. 2, H341; Repr. 2, H361d; STOT RE 1, H372; Aquatic Chronic 2, H411; Acute Tox. 4, H302; Acute Tox. 4, H332; STOT SE 3, H335	≤ 2.5%

· **Other substances that are irrelevant for the classification of the mixture:**

CAS: 7732-18-5 EINECS: 231-791-2	water, distilled, conductivity or of similar purity	50-100%
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· **Additional information** For the wording of the listed hazard phrases refer to section 16.

4 First aid measures

· **Description of first aid measures**

· **General information** Immediately remove any clothing soiled by the product.

· **After inhalation**

Supply fresh air.

Seek medical treatment.

(Contd. on page 3)

GB

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(Contd. of page 2)

- **After skin contact**
Wash off with plenty of water. Immediately remove contaminated clothing.
Seek medical treatment.
- **After eye contact**
Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing**
Rinse out mouth and then drink plenty of water.
avoid vomiting
Do not attempt to neutralise
Call for a doctor immediately.
- **Information for doctor**
- **Most important symptoms and effects, both acute and delayed**
corrosion
irritant effects
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents**
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- **For safety reasons unsuitable extinguishing agents**
For this substance/mixture no limitations of extinguishing agents are given
- **Special hazards arising from the substance or mixture**
Not combustible
Ambient fire may liberate hazardous vapours.
In case of fire, the following can be released:
nitrogen oxides
toxic metal compounds
Ambient fire may liberate hazardous vapours.
- **Advice for firefighters** Evacuate the danger area.
- **Protective equipment:**
Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.
Stay in danger area only with self-contained breathing apparatus.
- **Additional information**
Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Advice for non-emergency personnel:
Do not breathe vapours, aerosols.
Ensure adequate ventilation
Avoid substance contact.

(Contd. on page 4)

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(Contd. of page 3)

Wear protective equipment. Keep unprotected persons away.
Evacuate the danger area.
consult an expert
observe emergency procedures
Advice for emergency responders: Protective equipment see section 8.
· **Environmental precautions:** *Do not allow product to reach sewage system or any water course.*
· **Methods and material for containment and cleaning up:**
Cover drains.
Collect, bind, and pump off spills.
Observe possible material restrictions
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Clean up affected area.
Ensure adequate ventilation.
Send for recovery or disposal in suitable receptacles.
Dispose contaminated material as waste according to item 13.
· **Reference to other sections**
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling**
- **Precautions for safe handling**
Do not inhale substance. Avoid generation of vapours/aerosols
Observe label precautions.
General occupational hygiene measures.
Remove contaminated clothing.
- **Information about fire - and explosion protection:** *No special measures required.*
- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** *no metal container*
- **Information about storage in one common storage facility:** *national regulations*
- **Further information about storage conditions:** *Keep receptacle tightly sealed.*
- **Specific end use(s)** *No further relevant information available.*

8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** *No further data; see item 7.*
- **Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**

7697-37-2 nitric acid

WEL Short-term value: 2.6 mg/m³, 1 ppm

(Contd. on page 5)

GB

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(Contd. of page 4)

· **DNELs****7697-37-2 nitric acid**

Inhalative	DNEL long-term	1.3 mg/m ³ (human)
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· **Additional information:** The lists valid during the making were used as basis.· **Exposure controls**· **Personal protective equipment**· **General protective and hygienic measures**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

· **Respiratory protection:** required when vapours/aerosols are generated.· **Protection of hands:**

Suitable examples are gloves of KCL GmbH, D-36124 Eichenzell, e-mail: vertrieb@kcl.de with the following specification (test according to EN 374):

· **Material of gloves .**· **Penetration time of glove material .**· **For the permanent contact gloves made of the following materials are suitable:**

Nitrile rubber, NBR

Recommended thickness of the material: 0.11 mm

Value for the permeation: Level > 480 min

· **As protection from splashes gloves made of the following materials are suitable:**

Nitrile rubber, NBR

Recommended thickness of the material: 0.11 mm

Value for the permeation: Level > 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example

KCL 741 Dermatril® L (full contact)

KCL 741 Dermatril® L (splash contact)

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet (>,<) supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

· **Eye protection:** Tightly sealed goggles.· **Body protection:**

Protective work clothing.

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

· **Limitation and supervision of exposure into the environment**

Discharge into the environment must be avoided.

Do not empty into drains.

GB

(Contd. on page 6)

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(Contd. of page 5)

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

· Form:	Fluid
· Colour:	Coloured
· Odour:	Odourless
· Odour threshold:	Not determined.

· **pH-value:** Acidic

· **Change in condition**

· Melting point/freezing point:	undetermined
· Initial boiling point and boiling range:	100 °C

· **Flash point:** None

· **Flammability (solid, gaseous)** Not applicable.

· **Decomposition temperature:** Not determined.

· **Auto-ignition temperature:** Product is not selfigniting.

· **Explosive properties:** Product does not present an explosion hazard.

· **Explosion limits:**

· Lower:	Not determined.
· Upper:	Not determined.

· **Vapour pressure:** Not determined.

· **Density at 20 °C:** 1.02 g/cm³

· **Relative density** Not determined.

· **Vapour density** Not determined.

· **Evaporation rate** Not determined.

· **Solubility in / Miscibility with**

· **Water:** Fully miscible

· **Partition coefficient: n-octanol/water:** Not determined.

· **Viscosity:**

· dynamic:	Not determined.
· kinematic:	Not determined.

· **Solvent content:**

· Organic solvents:	0.0 %
· Water:	93.8 %

· **Other information** No further relevant information available.

10 Stability and reactivity

· **Reactivity corrosive**

(Contd. on page 7)

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(Contd. of page 6)

- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **Possibility of hazardous reactions** *Reacts with alkali (lyes)*
- **Conditions to avoid** *No further relevant information available.*
- **Incompatible materials:** *Metals*
- **Hazardous decomposition products:** *event of fire: See chapter 5*

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity**

- **LD/LC₅₀ values relevant for classification:**

7697-37-2 nitric acid

Oral	LD ₅₀	430 mg/kg (human)
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Inhalative	LC ₅₀	0.13 mg/l / 4 h (rat)
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1314-62-1 vanadium pentoxide

Oral	LD ₅₀	10 mg/kg (rat)
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- **Primary irritant effect:**
- **Skin corrosion/irritation** *Caustic effect on skin and mucous membranes.*
- **Serious eye damage/irritation** *Strong caustic effect.*
- **Respiratory or skin sensitisation** *No sensitising effects known.*

- **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version.

Corrosive

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

- **Acute effects (acute toxicity, irritation and corrosivity)**
corrosivity
irritation

12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

7697-37-2 nitric acid

EC ₅₀	4.6 mg/l (Daphnia) (48h)
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LC ₅₀	72 mg/l (Fish) (96 h)
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wasserfreie Substanz

- **Persistence and degradability** *No further relevant information available.*

(Contd. on page 8)

GB

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(Contd. of page 7)

· **Behaviour in environmental systems:**

· **Bioaccumulative potential**

7697-37-2 nitric acid

log Pow	≤2.3 (n-octanol/water)
	wasserfreie Substanz

· **Mobility in soil** No further relevant information available.

· **Additional ecological information:**

· **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **Other adverse effects** Do not allow to run into surface waters, wastewater, or soil.

13 Disposal considerations

· **Waste treatment methods**

· **Recommendation**

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations
Hand over to hazardous waste disposers.

· **Uncleaned packaging:**

· **Recommendation:** Disposal must be made according to official regulations.

· **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

14 Transport information

· **UN-Number**

· **ADR, IMDG, IATA** UN2031

· **UN proper shipping name**

· **ADR** 2031 NITRIC ACID
· **IMDG, IATA** NITRIC ACID

· **Transport hazard class(es)**

· **ADR**



· **Class**

8 (C1) Corrosive substances.

(Contd. on page 9)

GB

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(Contd. of page 8)

· Label	8
· IMDG, IATA	
	
· Class	8 Corrosive substances.
· Label	8
· Packing group	II
· ADR, IMDG, IATA	II
· Environmental hazards:	
· Marine pollutant:	No
· Special precautions for user	Warning: Corrosive substances.
· Danger code (Kemler):	80
· EMS Number:	F-A,S-B
· Segregation groups	Acids
· Stowage Category	D
· Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· Transport category	2
· Tunnel restriction code	E
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 2031 NITRIC ACID, 8, II

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- GHS label elements

The product is classified and labelled according to the Globally Harmonised System (GHS).

(Contd. on page 10)

GB

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(Contd. of page 9)

· **Hazard pictograms**

GHS05

· **Signal word** *Danger*· **Hazard-determining components of labelling:***nitric acid*· **Hazard statements***H290 May be corrosive to metals.**H314 Causes severe skin burns and eye damage.*· **Precautionary statements***P260 Do not breathe dusts or mists.**P280 Wear protective gloves/protective clothing/eye protection/face protection.**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.**P321 Specific treatment (see on this label).**P405 Store locked up.**P501 Dispose of contents/container in accordance with local/regional/national/international regulations.*· **Directive 2012/18/EU**· **Named dangerous substances - ANNEX I** *None of the ingredients is listed.*· **National regulations**· **Technical instructions (air):**

Class	Share in %
Wasser	93.8
III	0.2

· **Waterhazard class:** *Water hazard class 1 (Self-assessment): slightly hazardous for water.*· **Other regulations, limitations and prohibitive regulations**· **Substances of very high concern (SVHC) according to REACH, Article 57***not included*

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases***H272 May intensify fire; oxidiser.*

(Contd. on page 11)

GB

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(Contd. of page 10)

H290 May be corrosive to metals.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H341 Suspected of causing genetic defects.
H361d Suspected of damaging the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative
Ox. Liq. 2: Oxidizing liquids – Category 2
Met. Corr.1: Corrosive to metals – Category 1
Acute Tox. 4: Acute toxicity – Category 4
Acute Tox. 3: Acute toxicity – Category 3
Skin Corr. 1A: Skin corrosion/irritation – Category 1A
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Muta. 2: Germ cell mutagenicity – Category 2
Repr. 2: Reproductive toxicity – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

GB