

safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU



Vanadium ICP Standard Solution 1000 mg/l V

article number: **2480**
Version: **1.0 en**

date of compilation: 26.09.2016

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

1.1 Product identifier

Identification of the substance **Vanadium ICP Standard Solution**
Article number 2480
Registration number (REACH) not relevant (mixture)

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

Identified uses: laboratory chemical

1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co KG
Schoemperlenstr. 3-5
D-76185 Karlsruhe
Germany

Telephone: +49 (0) 721 - 56 06 0

Telefax: +49 (0) 721 - 56 06 149

e-mail: sicherheit@carlroth.de

Website: www.carlroth.de

Competent person responsible for the safety data sheet : Department Health, Safety and Environment

e-mail (competent person) : sicherheit@carlroth.de

1.4 Emergency telephone number

Emergency information service **Poison Centre Munich: +49/(0)89 19240**

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Classification acc. to GHS			
Section	Hazard class	Hazard class and category	Hazard statement
2.16	substance or mixture corrosive to metals	(Met. Corr. 1)	H290
3.2	skin corrosion/irritation	(Skin Irrit. 2)	H315
3.3	serious eye damage/eye irritation	(Eye Irrit. 2)	H319

Remarks

For full text of Hazard- and EU Hazard-statements: see SECTION 16.

safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU



Vanadium ICP Standard Solution 1000 mg/l V

article number: 2480

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal word

Warning

Pictograms



Hazard statements

H290 May be corrosive to metals.
H315 Causes skin irritation.
H319 Causes serious eye irritation.

Precautionary statements

Precautionary statements - prevention

P280 Wear protective gloves/eye protection/face protection.

Precautionary statements - response

P302+P352 IF ON SKIN: Wash with plenty of water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Labelling of packages where the contents do not exceed 125 ml

Signal word: **Warning**

Symbol(s)



2.3 Other hazards

There is no additional information.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Description of the mixture

Composition/information on ingredients.






safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU



Vanadium ICP Standard Solution 1000 mg/l V

article number: 2480

Name of substance	Identifier	wt%	Classification acc. to 1272/2008/EC	Pictograms	Specific Conc. Limits
Nitric acid	CAS No 7697-37-2 EC No 231-714-2 Index No 007-004-00-1 REACH Reg. No 01-2119487297- 23-xxxx	2	Ox. Liq. 2 / H272 Met. Corr. 1 / H290 Skin Corr. 1A / H314 EUH071	 	Ox. Liq. 2; H272: C ≥ 99 % Ox. Liq. 3; H272: 65 % ≤ C < 99 % Skin Corr. 1A; H314: C ≥ 20 % Skin Corr. 1B; H314: 5 % ≤ C < 20 % Skin Irrit. 2; H315: 1 % ≤ C < 5 % Eye Dam. 1; H318: C ≥ 3 % Eye Irrit. 2; H319: 1 % ≤ C < 3 %
Ammonium monovanadate	CAS No 7803-55-6 EC No 232-261-3 REACH Reg. No 01-2119983501- 37-xxxx	< 0,25	Acute Tox. 3 / H301 Acute Tox. 4 / H332 Eye Irrit. 2 / H319 Repr. 2 / H361fd STOT RE 1 / H372 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410	  	

Remarks

For full text of Hazard- and EU Hazard-statements: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures



General notes

Take off contaminated clothing.

Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact

Rinse skin with water/shower. In case of skin irritation, consult a physician.

Following eye contact

Rinse cautiously with water for several minutes. Consult an ophthalmologist.

Following ingestion

Rinse mouth. Call a doctor if you feel unwell.

4.2 Most important symptoms and effects, both acute and delayed

Irritation

safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU



Vanadium ICP Standard Solution 1000 mg/l V

article number: 2480

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings
water spray, foam, dry extinguishing powder, carbon dioxide (CO₂)

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Non-combustible.

Hazardous combustion products

in case of fire and/or explosion do not breathe fumes

5.3 Advice for firefighters

Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Do not breathe vapour/spray. Avoid contact with skin and eyes. Use personal protective equipment as required.

6.2 Environmental precautions

Keep away from drains, surface and ground water.

6.3 Methods and material for containment and cleaning up

Advices on how to contain a spill

Covering of drains.

Advices on how to clean up a spill

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

Other information relating to spills and releases

Place in appropriate containers for disposal.

Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8.
Incompatible materials: see section 10. Disposal considerations: see section 13.

Vanadium ICP Standard Solution 1000 mg/l V

article number: 2480

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid: Aerosol or mist formation. Handle and open container with care.

Advice on general occupational hygiene

Wash hands before breaks and after work.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in the original container. Keep container tightly closed.

Incompatible substances or mixtures

Observe hints for combined storage.

Consideration of other advice

- **Ventilation requirements**

Use local and general ventilation.

- **Specific designs for storage rooms or vessels**

Recommended storage temperature: 15 - 25 °C.

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

Country	Name of agent	CAS No	Notation	Identifier	TWA [ppm]	TWA [mg/m ³]	STEL [ppm]	STEL [mg/m ³]	Source
EU	nitric acid	7697-37-2		IOELV			1	2,6	2006/15/EC
MT	nitric acid	7697-37-2		OELV			1	2,6	L.N. 227

Notation

STEL Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period unless otherwise specified

TWA Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average

Relevant DNELs/DMELs/PNECs and other threshold levels

- **relevant DNELs of components of the mixture**

Name of substance	CAS No	Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
Nitric acid	7697-37-2	DNEL	1,3 mg/m ³	human, inhalatory	worker (industry)	acute - systemic effects
Nitric acid	7697-37-2	DNEL	1,3 mg/m ³	human, inhalatory	worker (industry)	chronic - local effects
Nitric acid	7697-37-2	DNEL	2,6 mg/m ³	human, inhalatory	worker (industry)	acute - local effects
Ammonium monovanadate	7803-55-6	DNEL	0,64 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects

safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU



Vanadium ICP Standard Solution 1000 mg/l V

article number: 2480

Name of substance	CAS No	End-point	Threshold level	Protection goal, route of exposure	Used in	Exposure time
Ammonium monovanadate	7803-55-6	DNEL	0,18 mg/m ³	human, inhalatory	worker (industry)	chronic - local effects
Ammonium monovanadate	7803-55-6	DNEL	0,92 mg/m ³	human, inhalatory	worker (industry)	acute - local effects

• relevant PNECs of components of the mixture

Name of substance	CAS No	Endpoint	Threshold level	Environmental compartment	Exposure time
Ammonium monovanadate	7803-55-6	PNEC	7,6 µg/l	freshwater	short-term (single instance)
Ammonium monovanadate	7803-55-6	PNEC	2,5 µg/l	marine water	short-term (single instance)
Ammonium monovanadate	7803-55-6	PNEC	6,93 µg/l	water	intermittent release
Ammonium monovanadate	7803-55-6	PNEC	450 µg/l	sewage treatment plant (STP)	short-term (single instance)
Ammonium monovanadate	7803-55-6	PNEC	240 mg/kg	freshwater sediment	short-term (single instance)
Ammonium monovanadate	7803-55-6	PNEC	79 mg/kg	marine sediment	short-term (single instance)

8.2 Exposure controls

Individual protection measures (personal protective equipment)



Eye/face protection

Use safety goggle with side protection.

Skin protection

• hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

• type of material

NBR (Nitrile rubber)

• material thickness

>0,11 mm

safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU



Vanadium ICP Standard Solution 1000 mg/l V

article number: 2480

- **breakthrough times of the glove material**

>480 minutes (permeation: level 6)

- **other protection measures**

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection

Respiratory protection necessary at: Aerosol or mist formation. Type: NO-P3 (against nitrous gases and particles, colour code: Blue/White).

Environmental exposure controls

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	liquid (fluid)
Colour	light yellow
Odour	odourless
Odour threshold	No data available

Other physical and chemical parameters

pH (value)	<2
Melting point/freezing point	not determined
Initial boiling point and boiling range	This information is not available.
Flash point	not determined
Evaporation rate	no data available
Flammability (solid, gas)	not relevant (fluid)
<u>Explosive limits</u>	
• lower explosion limit (LEL)	this information is not available
• upper explosion limit (UEL)	this information is not available
Explosion limits of dust clouds	not relevant
Vapour pressure	This information is not available.
Density	This information is not available.
Vapour density	This information is not available.
Bulk density	Not applicable
Relative density	Information on this property is not available.

safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU



Vanadium ICP Standard Solution 1000 mg/l V

article number: 2480

Solubility(ies)

Water solubility miscible in any proportion

Partition coefficient

n-octanol/water (log KOW) This information is not available.

Auto-ignition temperature Information on this property is not available.

Decomposition temperature no data available

Viscosity not determined

Explosive properties Shall not be classified as explosive

Oxidising properties none

9.2 Other information

There is no additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity

substance or mixture corrosive to metals.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Dangerous/dangerous reactions with: Ammonia (NH₃), Bases, Metals, Reducing agents, Organic solvents

10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

10.5 Incompatible materials

different metals

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Shall not be classified as acutely toxic.

• Acute toxicity of components of the mixture

Name of substance	CAS No	Exposure route	ATE
Ammonium monovanadate	7803-55-6	oral	218,1 mg/kg
Ammonium monovanadate	7803-55-6	inhalation: dust/mist	2,61 mg/l/4h

safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU



Vanadium ICP Standard Solution 1000 mg/l V

article number: 2480

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Summary of evaluation of the CMR properties

Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant

• Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

• Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Symptoms related to the physical, chemical and toxicological characteristics

• If swallowed

abdominal pain, nausea

• If in eyes

Causes serious eye irritation

• If inhaled

data are not available

• If on skin

causes skin irritation

Other information

None

SECTION 12: Ecological information

12.1 Toxicity

acc. to 1272/2008/EC: Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute)

Aquatic toxicity (acute) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Ammonium monovanadate	7803-55-6	LC50	30.700 µg/l	fish	48 h
Ammonium monovanadate	7803-55-6	ErC50	2.907 µg/l	algae	72 h
Ammonium monovanadate	7803-55-6	EC50	989,4 µg/l	algae	72 h

safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU



Vanadium ICP Standard Solution 1000 mg/l V

article number: 2480

Aquatic toxicity (chronic)

Aquatic toxicity (chronic) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Ammonium monovanadate	7803-55-6	LC50	44.000 µg/l	fish	24 h
Ammonium monovanadate	7803-55-6	EC50	>100 mg/l	microorganisms	3 h

12.2 Process of degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Data are not available.

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used.

13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

safety data sheet


according to Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU



Vanadium ICP Standard Solution 1000 mg/l V

article number: 2480

SECTION 14: Transport information

14.1	UN number	3264
14.2	UN proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
	Hazardous ingredients	Nitric acid
14.3	Transport hazard class(es)	
	Class	8 (corrosive substances)
14.4	Packing group	III (substance presenting low danger)
14.5	Environmental hazards	none (non-environmentally hazardous acc. to the dangerous goods regulations)
14.6	Special precautions for user	
	Provisions for dangerous goods (ADR) should be complied within the premises.	
14.7	Transport in bulk according to Annex II of MARPOL and the IBC Code	
	The cargo is not intended to be carried in bulk.	
14.8	Information for each of the UN Model Regulations	
	• Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)	
	UN number	3264
	Proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
	Particulars in the transport document	UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S., (contains: Nitric acid), 8, III, (E)
	Class	8
	Classification code	C1
	Packing group	III
	Danger label(s)	8
		
	Special provisions (SP)	274
	Excepted quantities (EQ)	E1
	Limited quantities (LQ)	5 L
	Transport category (TC)	3
	Tunnel restriction code (TRC)	E
	Hazard identification No	80
	• International Maritime Dangerous Goods Code (IMDG)	
	UN number	3264
	Proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
	Particulars in the shipper's declaration	UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S., (contains: Nitric acid), 8, III
	Class	8


safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU



Vanadium ICP Standard Solution 1000 mg/l V

article number: 2480

Packing group	III
Danger label(s)	8
	
Special provisions (SP)	223, 274
Excepted quantities (EQ)	E1
Limited quantities (LQ)	5 L
EmS	F-A, S-B
Stowage category	A
Segregation group	1 - Acids

SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

- **Regulation 649/2012/EU concerning the export and import of hazardous chemicals (PIC)**

None of the ingredients are listed.

- **Regulation 1005/2009/EC on substances that deplete the ozone layer (ODS)**

None of the ingredients are listed.

- **Regulation 850/2004/EC on persistent organic pollutants (POP)**

None of the ingredients are listed.

- **Restrictions according to REACH, Annex XVII**

None of the ingredients are listed.

- **List of substances subject to authorisation (REACH, Annex XIV)**

None of the ingredients are listed.

- **Limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products (2004/42/EC, Deco-Paint Directive)**

VOC content 0 %

- **Directive on industrial emissions (VOCs, 2010/75/EU)**

VOC content 0 %

- **Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) - Annex II**

None of the ingredients are listed.

- **Regulation 166/2006/EC concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)**

None of the ingredients are listed.

safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU



Vanadium ICP Standard Solution 1000 mg/l V

article number: 2480

Directive 2000/60/EC establishing a framework for Community action in the field of water policy (WFD)

None of the ingredients are listed.

15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
2006/15/EC	Commission Directive establishing a second list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Directives 91/322/EEC and 2000/39/EC
Acute Tox.	acute toxicity
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
Aquatic Acute	hazardous to the aquatic environment - acute hazard
Aquatic Chronic	hazardous to the aquatic environment - chronic hazard
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
CMR	Carcinogenic, Mutagenic or toxic for Reproduction
DMEL	Derived Minimal Effect Level
DNEL	Derived No-Effect Level
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
Eye Dam.	seriously damaging to the eye
Eye Irrit.	irritant to the eye
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IMDG	International Maritime Dangerous Goods Code
index No	the Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008
IOELV	indicative occupational exposure limit value
L.N. 227	Occupational Health and Safety Authority Act (CAP. 424)
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
Met. Corr.	substance or mixture corrosive to metals
NLP	No-Longer Polymer
Ox. Liq.	oxidising liquid

safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU



Vanadium ICP Standard Solution 1000 mg/l V

article number: 2480

Abbr.	Descriptions of used abbreviations
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
ppm	parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
Repr.	reproductive toxicity
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
Skin Corr.	corrosive to skin
Skin Irrit.	irritant to skin
STEL	short-term exposure limit
STOT RE	specific target organ toxicity - repeated exposure
TWA	time-weighted average
VOC	Volatile Organic Compounds
vPvB	very Persistent and very Bioaccumulative

Key literature references and sources for data

- Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU
- Regulation (EC) No. 1272/2008 (CLP, EU GHS)

List of relevant phrases (code and full text as stated in chapter 2 and 3)

Code	Text
H272	may intensify fire; oxidiser
H290	may be corrosive to metals
H301	toxic if swallowed
H314	causes severe skin burns and eye damage
H315	causes skin irritation
H319	causes serious eye irritation
H332	harmful if inhaled
H361fd	suspected of damaging fertility. Suspected of damaging the unborn child
H372	causes damage to organs through prolonged or repeated exposure
H400	very toxic to aquatic life
H410	very toxic to aquatic life with long lasting effects

Disclaimer

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.