

# Nitric acid 40 % for analysis

Revision date: 08.02.2024

Product code: 20134

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

### 1.1. Product identifier

Nitric acid 40 % for analysis

UFI:

DMRS-Q1RS-4000-7F45

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

# Use of the substance/mixture

Laboratory chemicals

Industrial uses: Uses of substances as such or in preparations at industrial sites

Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

### Uses advised against

Do not use for private purposes (household).

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

Company name:	AnalytiChem GmbH	
	ACD	
Street:	Stempelstraße 6	
Place:	D-47167 Duisburg	
Telephone:	0203/5194-0	Telefax: 0203/5194-290
E-mail:	info@analytichem.de	
Contact person:	Abteilung Produktsicherheit	Telephone:0203/5194-107/117
E-mail:	produktsicherheit@analytichem.de	
Internet:	www.analytichem.de	
Responsible Department:	Abteilung Produktsicherheit	
1.4. Emergency telephone	For Hazardous Materials [or Dangerous	Goods] Incidents Spill, Leak, Fire,
number:	Exposure, or Accident Call CHEMTREC 1-800-424-9300 Outside USA and Cana accepted)	

**Further Information** 

This product is a mixture. REACH Registration Number see section 3.

# SECTION 2: Hazards identification

# 2.1. Classification of the substance or mixture

### Regulation (EC) No 1272/2008

Met. Corr. 1; H290 Acute Tox. 3; H331 Skin Corr. 1A; H314 Eye Dam. 1; H318

Full text of hazard statements: see SECTION 16.

## 2.2. Label elements

# Regulation (EC) No 1272/2008

Hazard components for labelling nitric acid

Signal word:

l word:

Pictograms:





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### **Hazard statements**

H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H331	Toxic if inhaled.

#### **Precautionary statements**

P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if
	present and easy to do. Continue rinsing.
P308+P311	IF exposed or concerned: Call a POISON CENTER/doctor.

# Special labelling of certain mixtures

EUH071 Corrosive to the respiratory tract.

### 2.3. Other hazards

No data available

### **SECTION 3: Composition/information on ingredients**

### 3.2. Mixtures

#### **Chemical characterization**

Mixtures in aqueous solution

### Relevant ingredients

CAS No	Chemical name	Chemical name			
	EC No	Index No	REACH No		
Classification (Regulation (EC) No 1272/2008)					
7697-37-2	nitric acid	nitric acid			
	231-714-2	007-030-00-3	01-2119487297-23		
Ox. Liq. 3, Met. Corr. 1, Acute Tox. 3, Skin Corr. 1A; H272 H290 H331 H314 EUH071					

Full text of H and EUH statements: see section 16.

### Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. L	imits, M-factors and ATE	
7697-37-2	231-714-2	nitric acid	40 - < 45 %
		2,65 mg/l (vapours) Ox. Liq. 3; H272: >= 65 - 100 Skin Corr. 1A; H314: >= 20 rr. 1B; H314: >= 5 - < 20	

### **Further Information**

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

### **SECTION 4: First aid measures**

### 4.1. Description of first aid measures

### **General information**

First aider: Pay attention to self-protection!

### After inhalation

Provide fresh air.

If breathing is irregular or stopped, administer artificial respiration. Call a physician immediately.

## After contact with skin

Wash immediately with: Water



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Take off immediately all contaminated clothing and wash it before reuse.

Call a physician immediately.

# After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

Remove contact lenses, if present and easy to do. Continue rinsing.

### After ingestion

Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. Adverse human health effects and symptoms: Gastric perforation. Call a physician immediately. Do not allow a neutralisation agent to be drunk.

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

Irritant — skin irritation and eye damage Causes burns. Cough Dyspnoea Risk of serious damage to eyes. Vomiting Methaemoglobinaemia

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

No data available

### **SECTION 5: Firefighting measures**

### 5.1. Extinguishing media

### Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings.

### Unsuitable extinguishing media

no restriction

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

Non-combustible liquids Hazardous combustion products In case of fire may be liberated: Nitrogen oxides (NOx)

### 5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit. Do not inhale explosion and combustion gases. Avoid contact with skin, eyes and clothes.

### Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Move undamaged containers from immediate hazard area if it can be done safely. Use water spray jet to protect personnel and to cool endangered containers.

### **SECTION 6: Accidental release measures**

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

### General advice

### Corrosive to metals.

### For non-emergency personnel

Provide adequate ventilation. Use personal protection equipment. Avoid contact with skin, eyes and clothes. Remove persons to safety. Emergency procedures



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Do not breathe dust/fume/gas/mist/vapours/spray.

#### For emergency responders

Precautionary statements For emergency responders : Personal protection equipment: see section 8

### 6.2. Environmental precautions

Do not allow to enter into surface water or drains.

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

For containment

Cover drains.

Prevent spread over a wide area (e.g. by containment or oil barriers).

Collect in closed and suitable containers for disposal.

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

#### For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

#### Other information

Provide adequate ventilation. Do not breathe dust/fume/gas/mist/vapours/spray. Wear breathing apparatus if exposed to vapours/dusts/aerosols.

### 6.4. Reference to other sections

Safe handling: see section 7 Personal protection equipment: see section 8 Disposal: see section 13

### **SECTION 7: Handling and storage**

### 7.1. Precautions for safe handling

#### Advice on safe handling

Avoid exposure - obtain special instructions before use. If handled uncovered, arrangements with local exhaust ventilation have to be used. Read label before use. Handle and open container with care. When using do not eat, drink, smoke, sniff. Keep container tightly closed. Use personal protection equipment. Use extractor hood (laboratory). Provide adequate ventilation. Avoid contact with skin, eyes and clothes.

#### Advice on protection against fire and explosion

Material, oxygen-rich, Oxidising

### Advice on general occupational hygiene

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

### Further information on handling

Draw up and observe skin protection programme.

Wash hands and face before breaks and after work and take a shower if necessary. Take off immediately all contaminated clothing and wash it before reuse.

# 7.2. Conditions for safe storage, including any incompatibilities

### Requirements for storage rooms and vessels

Keep container tightly closed. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaustion at critical locations. Keep in a cool place.

# Hints on joint storage

Keep away from combustible material.



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### Further information on storage conditions

Unsuitable container/equipment material: Metal, Light metal storage temperature: +15°C - +25°C

### 7.3. Specific end use(s)

Laboratory chemicals

### **SECTION 8: Exposure controls/personal protection**

### 8.1. Control parameters

### Occupational exposure limits

CAS No	Substance	ppm	mg/m³	fib/cm³	Category	Origin
7697-37-2	Nitric acid	1	2.6		STEL (15 min)	

### 8.2. Exposure controls

### Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment.

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

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

#### Eye/face protection

Face protection shield goggles.

### Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. 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.

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: vertrieb@kcl.de With specification (test according to EN374):

By long-term hand contact: Trade name/designation: KCL 890 Vitoject® Suitable material: FKM (fluoro rubber) 0,7 mm Wearing time with permanent contact: > 480 min

By short-term hand contact Trade name/designation: KCL 890 Vitoject® Suitable material: FKM (fluoro rubber) 0,7 mm Wearing time with occasional contact (splashes): > 480 min

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).

### Skin protection

Wear suitable protective clothing.



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### **Respiratory protection**

Respiratory protection necessary at: aerosol or mist formation

### **Environmental exposure controls**

Do not allow to enter into surface water or drains.

# **SECTION 9: Physical and chemical properties**

### 9.1. Information on basic physical and chemical properties

Physical state:	Liquid	
Colour:	colourless	
Odour:	stinging	
Odour threshold:	No data available	
Melting point/freezing point:		No data available
Boiling point or initial boiling point and		No data available
boiling range:		
Flammability:		No data available
Lower explosion limits:		No data available
Upper explosion limits:		No data available
Flash point:		Х
Auto-ignition temperature:		No data available
Decomposition temperature:		No data available
pH-Value:		<1
Viscosity / kinematic:		No data available
Water solubility:		very soluble
Solubility in other solvents		
not determined		
Dissolution rate:		No data available
Partition coefficient n-octanol/water:		No data available
Dispersion stability:		No data available
Vapour pressure:		No data available
Vapour pressure:		No data available
Density:		1,246 g/cm³
Relative density:		No data available
Bulk density:		No data available
Relative vapour density:		No data available
Particle characteristics:		No data available
9.2. Other information		
Information with regard to physical has	zard classes	
Explosive properties		
No data available		
Sustaining combustion:		No data available
Self-ignition temperature		
Solid:		No data available
Gas:		No data available
Oxidizing properties		
Oxidising.		
Other safety characteristics		No dota analah
Evaporation rate:		No data available
Solvent separation test:		No data available
Solvent content:		No data available
Solid content:		No data available
Sublimation point:		No data available



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Softening point:	No data available				
Pour point:	No data available				
No data available:					
Viscosity / dynamic:	No data available				
Flow time:	No data available				
Further Information					

Corrosive to metals.

# **SECTION 10: Stability and reactivity**

### 10.1. Reactivity

Corrosive to metals.

Oxidising agent, strong

# 10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

# 10.3. Possibility of hazardous reactions

### Danger of explosion:

Acetone, Alcohol, Aniline, Substance, organic, Benzene, Aniline, Amines, Hydrocarbons, halogenated, Diethyl ether, Hydrazine, Dioxane, Acetic acid, Acetic anhydride, Ethanol, Fluorine, Formaldehyde, Rubber articles, Hydrocarbons, Copper, Powdered metals, Methanol, Phosphorus trichloride, Hydrogen phosphides, Gasoline, Reducing agent, titanium, Toluene, Hydrogen peroxide, tin, Xylene, Dichloromethane, carbon black, Potassium chlorate, permanganates, e.g. potassium permanganate

Ignition hazard:

Amines, Ammonia (NH3), Combustible substance, aldehydes, Hydrogen iodide (HI), White/yellow phosphor, Hydrogen sulphide (H2S), Alkali metals, Alkaline earth metal

Violent reaction with:

Nitriles, antimony, arsenic, boron, Alkali (lye), , Formic acid, sulphuric acid, sulphuric acid, sulphuric acid, selenium

### 10.4. Conditions to avoid

Heat

### 10.5. Incompatible materials

Cellulose, Metal Keep away from: Metal. Keep away from combustible material. The product develops hydrogen in an aqueous solution in contact with metals. / Nitrogen oxides (NOx)

# 10.6. Hazardous decomposition products

# In case of fire may be liberated:

SECTION 5: Firefighting measures

### Further information

No data available

### **SECTION 11: Toxicological information**

# 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

### Toxicocinetics, metabolism and distribution

Avoid exposure - obtain special instructions before use.

## Acute toxicity

Toxic if inhaled. If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects). Pulmonary oedema



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### ATEmix calculated

ATE (oral) > 2000 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) 5,560 mg/l; ATE (inhalation dust/mist) 0,9260 mg/l

CAS No	Chemical name						
	Exposure route	Dose	Species	Source	Method		
7697-37-2	nitric acid						
	inhalation vapour	ATE 2,65 mg/l					

#### Irritation and corrosivity

Causes severe skin burns and eye damage. Causes serious eye damage.

Corrosive to the respiratory tract.

Risk of serious damage to eyes.

### Sensitising effects

Based on available data, the classification criteria are not met.

### Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.

#### STOT-single exposure

Based on available data, the classification criteria are not met.

#### STOT-repeated exposure

Based on available data, the classification criteria are not met.

### Aspiration hazard

Based on available data, the classification criteria are not met.

#### Information on likely routes of exposure

There are no data available on the mixture itself.

#### Specific effects in experiment on an animal

There are no data available on the mixture itself.

### Additional information on tests

There are no data available on the mixture itself.

### Practical experience

There are no data available on the mixture itself.

# 11.2. Information on other hazards

# Endocrine disrupting properties

There are no data available on the mixture itself.

### Other information

There are no data available on the mixture itself.

### Further information

Irritant — skin irritation and eye damage Causes burns. Cough Dyspnoea Risk of serious damage to eyes. Vomiting Methaemoglobinaemia

# **SECTION 12: Ecological information**

# 12.1. Toxicity

Based on available data, the classification criteria are not met.



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CAS No	Chemical name							
	Aquatic toxicity	Dose		[h]   [d]	Species	Source	Method	
7697-37-2	nitric acid	nitric acid						
	Acute fish toxicity	LC50 mg/l	1559	96 h	Topeka shiner	Environmental Toxicology and Chemistry,	other: ASTM E729-26	
	Fish toxicity	NOEC	268 mg/l		juvenile Topeka shiner and with juvenile Fathead m	Study report (2009)	Growth tests estimated the test chemical	
	Algae toxicity	NOEC mg/l	> 419		several benthic diatoms; see results	Marine Biology 43:307-315 (1977)	Ten cultures of benthic diatoms were iso	
	Acute bacteria toxicity	EC50 mg/l()	> 1000	3 h	Activated sludge	Study report (2008)	OECD Guideline 209	

# 12.2. Persistence and degradability

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

## 12.3. Bioaccumulative potential

There are no data available on the mixture itself.

### 12.4. Mobility in soil

There are no data available on the mixture itself.

# 12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

## 12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

# 12.7. Other adverse effects

Discharge into the environment must be avoided.

### **Further information**

Do not empty into drains.

# **SECTION 13: Disposal considerations**

# 13.1. Waste treatment methods

#### **Disposal recommendations**

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste. Send to a physico-chemical treatment facility under observation of official regulations. Do not empty into drains. Do not mix with other wastes.

### Contaminated packaging

Handle contaminated packages in the same way as the substance itself. The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

# **SECTION 14: Transport information**

### Land transport (ADR/RID)

14.1. UN number or ID number:	UN 2031
14.2. UN proper shipping name:	NITRIC ACID
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8



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		5000. 2010-			
Classification code:	C1				
Limited quantity:	1 L E2				
Excepted quantity:	E2 2				
Transport category: Hazard No:	2 80				
Tunnel restriction code:	E				
Inland waterways transport (ADN)	F				
<u>14.1. UN number or ID number:</u>	UN 2031				
14.2. UN proper shipping name:	NITRIC ACID				
14.3. Transport hazard class(es):	8				
14.4. Packing group:	I				
Hazard label:	8				
Classification code:	C1				
Limited quantity:	1 L				
Excepted quantity:	E2				
Marine transport (IMDG)					
14.1. UN number or ID number:	UN 2031				
14.2. UN proper shipping name:	NITRIC ACID				
14.3. Transport hazard class(es):	8				
14.4. Packing group:	II				
Hazard label:	8				
Special Provisions:	-				
Limited quantity:	1 L				
Excepted quantity:	E2				
EmS:	F-A, S-B				
Air transport (ICAO-TI/IATA-DGR)					
14.1. UN number or ID number:	UN 2031				
14.2. UN proper shipping name:	NITRIC ACID				
14.3. Transport hazard class(es):	8				
14.4. Packing group:	II				
Hazard label:	8				
Special Provisions:	A212				
Limited quantity Passenger:	Forbidden				
Passenger LQ:	Forbidden				
Excepted quantity:	E0				
IATA-packing instructions - Passenger:		Forbidden			
IATA-max. quantity - Passenger:		Forbidden			
IATA-packing instructions - Cargo:		855			
IATA-max. quantity - Cargo:		30 L			
14.5. Environmental hazards					
ENVIRONMENTALLY HAZARDOUS:	No				
14.6. Special precautions for user Warning: Oxidising substances. strong 14.7. Maritime transport in bulk according t					
not applicable					
SECTION 15: Regulatory information					
15.1. Safety, health and environmental regu	lations/legislation s	pecific for the substance or mixtur	<u>e</u>		
EU regulatory information					

Restrictions on use (REACH, annex XVII): Entry 3



### according to Regulation (EC) No 1907/2006

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Information according to Directive 2012/18/EU (SEVESO III):	H2 ACUTE TOXIC			
Marketing and use of explosives precursors (Regulation (EU) 2019/1148): Acquisition, introduction, possession or use of this product by the general public is restricted by Regulation (EU) 2019/1148. All suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point.				
National regulatory information				
Employment restrictions:	Observe restrictions to employment for juveniles accord work protection guideline' (94/33/EC). Observe employr under the Maternity Protection Directive (92/85/EEC) for nursing mothers.	ment restrictions		
Water hazard class (D):	1 - slightly hazardous to water			
15.2. Chemical safety assessment				
Chemical safety assessments for su	ubstances in this mixture were not carried out.			

# **SECTION 16: Other information**

#### Changes

This data sheet contains changes from the previous version in section(s): 1,12.

### Abbreviations and acronyms

Ox. Liq: Oxidising liquid
Met. Corr: Substance or mixture corrosive to metals
Acute Tox: Acute toxicity
Skin Corr: Skin corrosion
Eye Dam: Eye damage
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
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%

# Classification for mixtures and used evaluation method according to Regulation (EC) No 1272/2008 [CLP]

Classification	Classification procedure
Met. Corr. 1; H290	On basis of test data
Acute Tox. 3; H331	Calculation method
Skin Corr. 1A; H314	Calculation method
Eye Dam. 1; H318	Calculation method

# Relevant H and EUH statements (number and full text)

H272	May intensify fire; oxidiser.
H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
EUH071	Corrosive to the respiratory tract.

### **Further Information**

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



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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.

(The data for the relevant ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)