

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

KRONES colclean DI 8003
Article number: 0903286597, 0903286598, 0903286662

IUPAC	Nitric acid 15,5 %
EU-INDEX	007-004-00-1
EINECS/ELINCS	231-714-2
CAS	7697-37-2

1.2 Relevant identified uses of the substance or mixture and uses advised against**1.2.1 Relevant uses**

Production of chlorine dioxide

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company KIC KRONES Internationale Cooperationsgesellschaft mbH
Böhmerwaldstraße 5
93073 Neutraubling / GERMANY
Phone +49 9401 70-3020
Fax +49 9401 70-3696
Homepage www.kic-krones.com
E-mail kic@kic-krones.com

Address enquiries to

Technical information kic@kic-krones.com
Safety Data Sheet sdb@chemiebuero.de

1.4 Emergency telephone number



Advisory body +49 (0)89-19240 (24h) (english)

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.
Met. Corr. 1: H290 May be corrosive to metals.
Acute Tox. 4: H332 Harmful if inhaled.

2.2 Label elements

The product is required to be labelled in accordance with regulation (EC) No 1272/2008 (CLP).

Hazard pictograms	 
Signal word	DANGER
Contains:	Nitric acid 15,5 % EU-INDEX 007-004-00-1
Hazard statements	H314 Causes severe skin burns and eye damage. H290 May be corrosive to metals. H332 Harmful if inhaled.
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 [or 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. P390 Absorb spillage to prevent material damage. P501 Dispose of contents/container in accordance with local/national regulation.
Special labelling	EUH071 Corrosive to the respiratory tract.

2.3 Other hazards

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 substance.

Range [%]	Substance
100	Nitric acid 15,5 %
	CAS: 7697-37-2, EINECS/ELINCS: 231-714-2, EU-INDEX: 007-004-00-1, Reg-No.: 01-2119487297-23-XXXX
	GHS/CLP: Ox. Liq. 3: H272 - Skin Corr. 1A: H314 - Met. Corr. 1: H290 - Acute Tox. 3: H331

Comment on component parts	Substances of Very High Concern - SVHC: substances are not contained or are below 0.1%. All chemical substances in this material are included on or exempted from listing on the TSCA Inventory. For full text of H-statements: see SECTION 16.
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SECTION 4: First aid measures

4.1 Description of first aid measures

General information	Remove contaminated soaked clothing immediately and dispose of safely.
Inhalation	Ensure supply of fresh air. Remove the victim into fresh air and keep him calm. Consult a doctor immediately.
Skin contact	Immediate medical treatment necessary, as untreated burns can result in slow-healing wounds. In case of contact with skin wash off immediately with plenty of water.
Eye contact	Consult a doctor immediately. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Shield unaffected eye.
Ingestion	Consult a doctor immediately. Rinse out mouth and give plenty of water to drink. Do not induce vomiting. Do not attempt to neutralize.

4.2 Most important symptoms and effects, both acute and delayed

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 (NO_x).

5.3 Advice for firefighters

Do not inhale explosion and/or combustion gases.
Use self-contained breathing apparatus.
Wear full protective suit.
Cool containers at risk with water spray jet.
Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.
Use personal protective equipment.
Remove persons to safety.

6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater.
In case the product spills into drains/surface waters/groundwater, immediately inform the authorities.

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 with the regulations.

6.4 Reference to other sections

See SECTION 8+13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Use only in well-ventilated areas.
Avoid spilling or spraying in enclosed areas.
When diluting, always stir product into water.
Avoid contact with eyes and skin. Use personal protective equipment.

Do not eat, drink, smoke or take drugs at work.
Remove soiled or soaked clothing immediately.
Clean skin thoroughly after work, apply skin cream.
Use barrier skin cream.

7.2 Conditions for safe storage, including any incompatibilities

Provide acid-resistant floor.
 Keep only in original container.

Do not store with alkalis.
 Do not store together with oxidizing agents.
 Do not store together with metals.
 Do not store with combustible materials.

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

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
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/m ³ , 2,6

Ingredients with occupational exposure limits to be monitored (EU)

Substance / EC LIMIT VALUES
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/m ³

DNEL

Substance
Nitric acid 15,5 %, CAS: 7697-37-2
Industrial, inhalative, Long-term - local effects: 1,3 mg/m ³ .
Industrial, inhalative, Acute - local effects: 2,6 mg/m ³ .
general population, inhalative, Long-term - local effects: 0,65 mg/m ³ .
general population, inhalative, Acute - local effects: 1,3 mg/m ³ .

PNEC

Substance
Nitric acid 15,5 %, CAS: 7697-37-2
There are no PNEC values established for the substance.,

8.2 Exposure controls

Additional advice on system design	Ensure adequate ventilation on workstation. Measurement methods for taking workplace measurements must meet the performance requirements of DIN EN 482. For example, recommendations are given in the IFA's list of hazardous substances.
Eye protection	Tightly fitting goggles. (EN 166:2001) Face shield.
Hand protection	The details concerned are recommendations. Please contact the glove supplier for further information. ≥ 0,7 mm, Butyl rubber, >480 min (EN 374-1/-2/-3). ≥ 0,7 mm, Viton, >480 min (EN 374-1/-2/-3). ≥ 0,5 mm, Chloroprene, >480 min (EN 374-1/-2/-3).
Skin protection	Acid-resistant protective clothing.
Other	Avoid contact with eyes and skin. Do not breathe vapour/spray. 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	Respiratory protection mask in the event of high concentrations. Multi-purpose filter ABEK. (DIN EN 14387)
Thermal hazards	not applicable
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 clear
Odor	faintly pungent
Odour threshold	No information available.
pH-value	strongly acidic
pH-value [1%]	< 2
Boiling point [°C]	ca. 100
Flash point [°C]	not applicable
Flammability (solid, gas) [°C]	not applicable
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Oxidising properties	no
Vapour pressure/gas pressure [kPa]	No information available.
Density [g/ml]	1,09
Bulk density [kg/m³]	not applicable
Solubility in water	completely miscible
Partition coefficient [n-octanol/water]	No information available.
Viscosity	No information available.
Relative vapour density determined in air	No information available.
Evaporation speed	No information available.
Melting point [°C]	< 0
Autoignition temperature [°C]	not self-igniting
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 alkalis (lyes).
Reactions with metals, with evolution of hydrogen.
Reactions with reducing agents.
Reactions with oxidizing agents.
Reactions with alcohols.
Reactions with amines.
Reactions with peroxides.
Exothermic reaction with:
Water

10.4 Conditions to avoid

Strong heating.

10.5 Incompatible materials

See SECTION 10.3.

10.6 Hazardous decomposition products

Corrosive gases/vapours.
In the case of heating following (decomposition) products may occur:
Nitrous gases.
Nitrous oxides (NO_x).

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product
ATE-mix, inhalative, ca. 17 mg/l/4h.
Substance
Nitric acid 15,5 %, CAS: 7697-37-2
LC50, inhalative, Rat: > 2,65 mg/l/4h (OECD 403).
ATE, inhalative, Rat: 5 mg/l/4h (53% solution).

Serious eye damage/irritation	Risk of serious damage to eyes. Calculation method
Skin corrosion/irritation	Product is caustic. Calculation method
Respiratory or skin sensitisation	Based on the available information, the classification criteria are not fulfilled.
Specific target organ toxicity — single exposure	Based on the available information, the classification criteria are not fulfilled.
Specific target organ toxicity — repeated exposure	Based on the available information, the classification criteria are not fulfilled.
Mutagenicity	Based on the available information, the classification criteria are not fulfilled.
Reproduction toxicity	Based on the available information, the classification criteria are not fulfilled.
Carcinogenicity	Based on the available information, the classification criteria are not fulfilled.
Aspiration hazard	Based on the available information, the classification criteria are not fulfilled.
General remarks	If swallowed - risk of perforation! Toxicological data of complete product are not available. 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
Nitric acid 15,5 %, CAS: 7697-37-2
LC50, (96h), Salmo gairdneri: 12,5 mg/l ; pH=3,7 (Lit.).
LC50, (96h), Gambusia affinis: 72 mg/l.
EC50, (48h), Daphnia magna: 180 mg/l.

12.2 Persistence and degradability

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

12.3 Bioaccumulative potential

logPow: -2,3 (25°C)(CAS 7697-37-2)

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.

Ecological data of complete product are not available.

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

Dispose of as hazardous waste.
Coordinate disposal with the authorities if necessary.

Waste no. (recommended)

060105*

Contaminated packaging

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

Waste no. (recommended)

150110*

SECTION 14: Transport information

14.1 UN number


Transport by land according to ADR/RID 2031


Inland navigation (ADN) 2031


Marine transport in accordance with IMDG 2031


Air transport in accordance with IATA 2031

14.2 UN proper shipping name

Transport by land according to ADR/RID	Nitric 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)	Nitric acid
- Classification Code	C1
- Label	

Marine transport in accordance with IMDG	Nitric acid
- EMS	F-A, S-B
- Label	
- IMDG LQ	1 l

Air transport in accordance with IATA	Nitric acid
- Label	

14.3 Transport hazard class(es)

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

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

No information available.

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

EEC-REGULATIONS 1991/689 (2001/118); 2010/75; 2004/42; 648/2004; 1907/2006 (REACH); 1272/2008; 75/324/EEC (2008/47/EC); (EU) 2015/830; (EU) 2016/131; (EU) 517/2014

TRANSPORT-REGULATIONS DOT-Classification, ADR (2017); IMDG-Code (2017, 38. Amdt.); IATA-DGR (2017).

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 young people.
Observe employment restrictions for mothers-to-be and nursing mothers.

- **VOC (2010/75/CE)** not applicable

15.2 Chemical safety assessment

For the following substances of this preparation a chemical safety assessment has been carried out:
nitric acid

SECTION 16: Other information**16.1 Hazard statements (SECTION 03)**

H331 Toxic if inhaled.
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H272 May intensify fire; oxidiser.

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
 ATE = acute toxicity estimate
 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
 LC0 = lethal concentration, 0%
 LOAEL = lowest-observed-adverse-effect level
 MARPOL = International Convention for the Prevention of Marine Pollution from Ships
 NOAEL = No Observed Adverse Effect Level
 NOEC = No Observed Effect Concentration
 PBT = Persistent, Bioaccumulative and Toxic substance
 PNEC = Predicted No-Effect Concentration
 REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
 STP = Sewage Treatment Plant
 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)
 Met. Corr. 1: H290 May be corrosive to metals. (Calculation method)
 Acute Tox. 4: H332 Harmful if inhaled. (Calculation method)

Modified position

SECTION 15 been added: EUH071 Corrosive to the respiratory tract.
SECTION 2 been added: H332 Harmful if inhaled.
SECTION 2 been added: exclamation mark
SECTION 2 been added: Acute Tox. 4
SECTION 2 been added: H290 May be corrosive to metals.
SECTION 2 been added: Met. Corr. 1
SECTION 2 been added: P390 Absorb spillage to prevent material damage.
SECTION 7 been added: Avoid contact with eyes and skin. Use personal protective equipment.
SECTION 8 been added: Measurement methods for taking workplace measurements must meet the performance requirements of DIN EN 482. For example, recommendations are given in the IFA's list of hazardous substances.
SECTION 8 deleted: Short term: filter apparatus, filter E (DIN EN 14387).
SECTION 8 been added: Multi-purpose filter ABEK. (DIN EN 14387)
SECTION 9 deleted: not determined
SECTION 9 been added: No information available.
SECTION 11 been added: Based on the available information, the classification criteria are not fulfilled.
SECTION 11 been added: Risk of serious damage to eyes.
SECTION 11 been added: Calculation method
SECTION 11 deleted: not determined
SECTION 12 been added: No information available.
SECTION 12 deleted: not determined
SECTION 16 been added: Calculation method

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