

according to Regulation (EC) No. 1907/2006

Revision Date 18.07.2018

Version 11.0

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

#### 1.1 Product identifier

Catalogue No. 170313

Product name Cobalt ICP standard traceable to SRM from NIST

Co(NO<sub>3</sub>)₂ in HNO<sub>3</sub> 2-3% 1000 mg/l Co Certipur®

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

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

Identified uses Reagent for analysis

For additional information on uses please refer to the Merck Chemicals

portal (www.merckgroup.com).

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

Company Merck KGaA \* 64271 Darmstadt \* Germany \* Phone:+49 6151 72-0

Responsible Department LS-QHC \* e-mail: prodsafe@merckgroup.com

1.4 Emergency telephone Please contact the regional company representation in your country.

number

#### **SECTION 2. Hazards identification**

### 2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

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Co(NO<sub>3</sub>)<sub>2</sub> in HNO<sub>3</sub> 2-3% 1000 mg/l Co Certipur®

Corrosive to metals, Category 1, H290

Skin irritation, Category 2, H315

Eye irritation, Category 2, H319

Carcinogenicity, Category 1B, Inhalation, H350i

Chronic aquatic toxicity, Category 3, H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### 2.2 Label elements

## Labelling (REGULATION (EC) No 1272/2008)

### Hazard pictograms





#### Signal word

Danger

#### Hazard statements

H350i May cause cancer by inhalation.

H290 May be corrosive to metals.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H412 Harmful to aquatic life with long lasting effects.

## Precautionary statements

#### Prevention

P201 Obtain special instructions before use.

P273 Avoid release to the environment.

#### Response

P302 + P352 IF ON SKIN: Wash with plenty of soap and 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.

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P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Restricted to professional users.

#### Reduced labelling (≤125 ml)

Hazard pictograms





Signal word

Danger

Hazard statements

H350 May cause cancer.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P201 Obtain special instructions before use.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Contains: Cobalt(II) nitrate

### 2.3 Other hazards

None known.

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

Chemical nature

Nitric acid solution.

3.1 Substance

Not applicable

3.2 Mixture

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### Hazardous components (REGULATION (EC) No 1272/2008)

Chemical name (Concentration)

CAS-No. Registration number Classification

nitric acid (>= 1 % - < 5 %)

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

7697-37-2 01-2119487297-23-

XXXX Oxidizing liquid, Category 2, H272

Corrosive to metals, Category 1, H290

Acute toxicity, Category 1, H330 Skin corrosion, Category 1A, H314

Cobalt(II) nitrate (>= 0,025 % - < 0,1 %)

10141-05-6 \*)

Germ cell mutagenicity, Category 2, H341

Reproductive toxicity, Category 1B, H360F

Carcinogenicity, Category 1B, H350i

Respiratory sensitisation, Category 1, H334

Skin sensitisation, Category 1, H317

Acute aquatic toxicity, Category 1, H400

Chronic aquatic toxicity, Category 1, H410

M-Factor: 10

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### **SECTION 4. First aid measures**

## 4.1 Description of first aid measures

General advice

First aider needs to protect himself.

After inhalation: fresh air. Call in physician.

<sup>\*)</sup> A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

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

irritant effects

The following applies to nitrites/nitrates in general: methaemoglobinaemia after the uptake of large quantities.

Symptoms of an acute cobalt intoxication: diarrhoea, loss of appetite, drop in body temperature, drop in blood pressure. Toxic effect on kidneys (proteinuria, anuria), heart, and pancreas.

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

No information available.

## **SECTION 5. Firefighting measures**

#### 5.1 Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

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

Not combustible.

Ambient fire may liberate hazardous vapours.

## 5.3 Advice for firefighters

Special protective equipment for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

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#### Further 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.

## **SECTION 6. Accidental release measures**

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

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

### 6.2 Environmental precautions

Do not let product enter drains.

### 6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

### 6.4 Reference to other sections

Indications about waste treatment see section 13.

### **SECTION 7. Handling and storage**

### 7.1 Precautions for safe handling

Advice on safe handling

Observe label precautions.

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Hygiene measures

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

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### 7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

No metal containers.

Storage conditions

Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorised persons.

Recommended storage temperature see product label.

#### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

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

### 8.1 Control parameters

### **Derived No Effect Level (DNEL)**

nitric acid (7697-37-2)

Worker DNEL, Local effects inhalation 1,3 mg/m³

longterm

## **Predicted No Effect Concentration (PNEC)**

nitric acid (7697-37-2)

PNEC no data available

#### 8.2 Exposure controls

#### **Engineering measures**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

### Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

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Eye/face protection

Safety glasses

Hand protection

full contact:

Glove material: Nitrile rubber

Glove thickness: 0,11 mm

Break through time: > 480 min

splash contact:

Glove material: Nitrile rubber

Glove thickness: 0,11 mm
Break through time: > 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).

Other protective equipment protective clothing

Respiratory protection

required when vapours/aerosols are generated.

Recommended Filter type: filter ABEK

The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

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### Environmental exposure controls

Do not let product enter drains.

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

## 9.1 Information on basic physical and chemical properties

Form liquid

Colour pink

Odour odourless

Odour Threshold Not applicable

pH ca. 0,5

at 20 °C

Melting point No information available.

Boiling point No information available.

Flash point Not applicable

Evaporation rate No information available.

Flammability (solid, gas) No information available.

Lower explosion limit No information available.

Upper explosion limit No information available.

Vapour pressure No information available.

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Relative vapour density No information available.

Density ca.1,014 g/cm3

at 20 °C

Relative density No information available.

Water solubility No information available.

Partition coefficient: n- No information available.

octanol/water

Auto-ignition temperature No information available.

Decomposition temperature No information available.

Viscosity, dynamic No information available.

Explosive properties Not classified as explosive.

Oxidizing properties none

9.2 Other data

Corrosion May be corrosive to metals.

### **SECTION 10. Stability and reactivity**

#### 10.1 Reactivity

See section 10.3

#### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### 10.3 Possibility of hazardous reactions

Generates dangerous gases or fumes in contact with:

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Metals, metal alloys

Release of:, nitrous gases, Hydrogen

increased reactivity with:

oxidisable substances, organic solvent, Metals, metal alloys, Alkali metals, Alkaline earth metals,

Ammonia, alkalines, acids

Violent reactions possible with:

The generally known reaction partners of water.

### 10.4 Conditions to avoid

no information available

### 10.5 Incompatible materials

Metals, metal alloys

## 10.6 Hazardous decomposition products

no information available

### **SECTION 11. Toxicological information**

### 11.1 Information on toxicological effects

### **Mixture**

Acute oral toxicity

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

Acute inhalation toxicity

Symptoms: Possible symptoms:, mucosal irritations

Acute dermal toxicity

This information is not available.

Skin irritation

Mixture causes skin irritation.

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Eye irritation

Mixture causes serious eye irritation.

Sensitisation

Sensitisation possible in predisposed persons.

Germ cell mutagenicity

This information is not available.

Carcinogenicity

This information is not available.

Reproductive toxicity

This information is not available.

Teratogenicity

This information is not available.

CMR effects

Carcinogenicity:

Possible carcinogen by inhalation.

Specific target organ toxicity - single exposure

This information is not available.

Specific target organ toxicity - repeated exposure

This information is not available.

Aspiration hazard

This information is not available.

### 11.2 Further information

Symptoms of an acute cobalt intoxication: diarrhoea, loss of appetite, drop in body temperature, drop in blood pressure. Toxic effect on kidneys (proteinuria, anuria), heart, and pancreas.

The following applies to nitrites/nitrates in general: methaemoglobinaemia after the uptake of large quantities.

Other dangerous properties can not be excluded.

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This substance should be handled with particular care.

## Components

#### nitric acid

Acute inhalation toxicity

LC50 Rat: > 2,65 mg/l; 4 h; vapour

OECD Test Guideline 403

Germ cell mutagenicity

Genotoxicity in vitro

Ames test

Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

## Cobalt(II) nitrate

Acute dermal toxicity

LD50 Rat: > 2.000 mg/kg

OECD Test Guideline 402

Skin irritation

Rabbit

Result: No irritation

OECD Test Guideline 404

Eye irritation

Rabbit

Result: Causes serious eye irritation.

OECD Test Guideline 405

Sensitisation

Guinea pig

Result: positive

Method: OECD Test Guideline 406

(in analogy to similar products)

Germ cell mutagenicity

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Genotoxicity in vitro

Ames test

Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

(in analogy to similar products)

## **SECTION 12. Ecological information**

#### **Mixture**

### 12.1 Toxicity

No information available.

### 12.2 Persistence and degradability

No information available.

## 12.3 Bioaccumulative potential

No information available.

## 12.4 Mobility in soil

No information available.

### 12.5 Results of PBT and vPvB assessment

Substance(s) in the mixture do(es) not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII, or a PBT/vPvB assessment was not conducted.

### 12.6 Other adverse effects

Discharge into the environment must be avoided.

## Components

nitric acid

Biodegradability

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

Partition coefficient: n-octanol/water

log Pow: -2,3

OECD Test Guideline 107

Bioaccumulation is not expected.

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Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

Henry constant
2482 Pa\*m³/mol
Method: (calculated)

(Lit.) Distribution preferentially in air.

## Cobalt(II) nitrate

Toxicity to fish

LC50 Carassius auratus (goldfish): 66,8 mg/l; 96 h

(ECOTOX Database) (Regulation (EC) No 1272/2008, Annex VI)

Toxicity to daphnia and other aquatic invertebrates EC50 Daphnia magna (Water flea): 3,4 mg/l; 48 h

(ECOTOX Database) (Regulation (EC) No 1272/2008, Annex VI)

Biodegradability

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

M-Factor

10

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## **SECTION 13. Disposal considerations**

Waste treatment methods

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

## **SECTION 14. Transport information**

Land transport (ADR/RID)

**14.1 UN number** UN 3264

14.2 Proper shipping name CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC

ACID SOLUTION)

**14.3 Class** 8

14.4 Packing group

14.5 Environmentally hazardous --

14.6 Special precautions for yes

user

Tunnel restriction code E

## Inland waterway transport (ADN)

Not relevant

### Air transport (IATA)

**14.1 UN number** UN 3264

**14.2 Proper shipping name** CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC

ACID SOLUTION)

**14.3 Class** 8

14.4 Packing group

14.5 Environmentally hazardous --

14.6 Special precautions for no

user

## Sea transport (IMDG)

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

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**14.1 UN number** UN 3264

14.2 Proper shipping name CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC

ACID NOT MORE THAN 5%)

**14.3 Class** 8

14.4 Packing group

14.5 Environmentally hazardous --

14.6 Special precautions for yes

user

EmS F-A S-B

## 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not relevant

### **SECTION 15. Regulatory information**

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

EU regulations

Major Accident Hazard SEVESO III
Legislation Not applicable

Occupational restrictions Take note of Dir 94/33/EC on the protection of young people at

work. Take note of Dir 92/85/EEC on the safety and health at work

of pregnant workers.

Regulation (EC) No 1005/2009 on substances that not regulated

deplete the ozone layer

Regulation (EC) No 850/2004 of the European not regulated

Parliament and of the Council of 29 April 2004 on

persistent organic pollutants and amending

Directive 79/117/EEC

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Substances of very high concern (SVHC)

This product does contain substances of

very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 59

above the respective regulatory concentration limit of > 0.1 % (w/w).

Contains: Cobalt(II) nitrate

National legislation

Storage class 6.1 D

## 15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

#### **SECTION 16. Other information**

## Full text of H-Statements referred to under sections 2 and 3.

H272	May intensify fire; oxidizer.
H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if
	inhaled.
H341	Suspected of causing genetic defects.
H350i	May cause cancer by inhalation.
H360F	May damage fertility.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

## Training advice

Provide adequate information, instruction and training for operators.

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## Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

## Regional representation

This information is given on the authorised Safety Data Sheet for your country.

The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.