

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Description: Cobalt, plasma standard solution, Specpure®, C0 10µg/ml
Cat No. : 45252
Molecular Formula Co in 2% HN O3

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

Recommended Use Laboratory chemicals.
Uses advised against No Information available

1.3. Details of the supplier of the safety data sheet

Company

Thermo Fisher (Kandel) GmbH
 Erlenbachweg 2, 76870 Kandel, Germany
 Tel: +49 (0) 721 84007 280
 Fax: +49 (0) 721 84007 300

Swiss distributor - Fisher Scientific AG
 Neuhofstrasse 11, CH 4153 Reinach
 Tel: +41 (0) 56 618 41 11
<https://www.fishersci.ch/ch/en/customer-help-support/forms/email-us.html>

E-mail address begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11
 Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99
CHEMTREC Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

customers in Switzerland:
 Tox Info Suisse Emergency Number: **145 (24hr)**
 Tox Info Suisse: +41-44 251 51 51 (Emergency number from abroad)
 Chemtrec (24h) Toll-Free: 0800 564 402
 Chemtrec Local: +41-43 508 20 11 (Zurich)

Poison Centre - Emergency information services

Ireland : National Poisons Information Centre (NPIC) -
01 809 2166 (8am-10pm, 7 days a week)
Malta : +356 2395 2000
Cyprus : +357 2240 5611

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

SAFETY DATA SHEET

Cobalt, plasma standard solution, Specpure®, C0 10µg/ml

Revision Date 30-Nov-2024

CLP Classification - Regulation (EC) No 1272/2008

Physical hazards

Substances/mixtures corrosive to metal

Category 1 (H290)

Health hazards

Skin Corrosion/Irritation

Category 2 (H315)

Serious Eye Damage/Eye Irritation

Category 2 (H319)

Environmental hazards

Based on available data, the classification criteria are not met

Full text of Hazard Statements: see section 16

2.2. Label elements



Signal Word

Warning

Hazard Statements

H290 - May be corrosive to metals

H315 - Causes skin irritation

H319 - Causes serious eye irritation

Precautionary Statements

P390 - Absorb spillage to prevent material damage

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

P332 + P313 - If skin irritation occurs: Get medical advice/attention

P337 + P313 - If eye irritation persists: Get medical advice/attention

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

2.3. Other hazards

This product does not contain any known or suspected endocrine disruptors

Section 3: Composition/information on ingredients

3.2. Mixtures

Component	CAS No	EC No	Weight %	CLP Classification - Regulation (EC) No 1272/2008
Water	7732-18-5	231-791-2	987.999	-
Nitric acid	7697-37-2	231-714-2	2.00	Ox. Liq. 3 (H272)

ALFAA45252

SAFETY DATA SHEET

Cobalt, plasma standard solution, Specpure®, C0 10µg/ml

Revision Date 30-Nov-2024

				Met. Corr. 1 (H290) Acute Tox. 3 (H331) Skin Corr. 1A (H314) Eye Dam. 1 (H318) (EUH071)
Cobalt	7440-48-4	EEC No. 231-158-0	0.001	Resp. Sens. 1B (H334) Skin Sens. 1 (H317) Muta.2 (H341) Repr. 1B (H360F) Carc. 1B (H350) Aquatic Chronic 4 (H413)

Component	Specific concentration limits (SCL's)	M-Factor	Component notes
Nitric acid	Ox. Liq. 2 :: C>=99% Ox. Liq. 3 :: 65%<=C<99% Acute Tox. 1 (inhal) :: C>=70% Acute Tox. 3 (inhal) :: 70%>C>=26.5% Acute Tox. 4 (inhal) :: 26.5%>C>=13.25% Skin Corr. 1A :: C>=20% Skin Corr. 1B :: 5%<=C<20% Met. Corr. 1 :: C>=2% EUH071 :: C>=20%	-	-

Component	ECHA (RAC) ATE (Oral)	ECHA (RAC) ATE (Dermal)	ECHA (RAC) ATE (Inhalation)
Nitric acid	-	-	ATE = 2.65 mg/L (vapours)

Full text of Hazard Statements: see section 16

Section 4: First aid measures

4.1. Description of first aid measures

General Advice	If symptoms persist, call a physician.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.
Ingestion	Clean mouth with water and drink afterwards plenty of water.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
Self-Protection of the First Aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

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

None reasonably foreseeable.

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

Notes to Physician	Treat symptomatically.
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Section 5: Firefighting measures

SAFETY DATA SHEET

Cobalt, plasma standard solution, Specpure®, C0 10µg/ml

Revision Date 30-Nov-2024

5.1. Extinguishing media

Suitable Extinguishing Media

Not combustible.

Extinguishing media which must not be used for safety reasons

No information available.

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous Combustion Products

Nitrogen oxides (NO_x), Cobalt oxides.

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment as required.

6.2. Environmental precautions

Should not be released into the environment. See Section 12 for additional Ecological Information. Do not allow material to contaminate ground water system. Do not flush into surface water or sanitary sewer system.

6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

Section 7: Handling and storage

7.1. Precautions for safe handling

Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

7.2. Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Technical Rules for Hazardous Substances (TRGS) 510
Storage Class (LGK) (Germany)

Storage Class/LGK 12

SAFETY DATA SHEET

Cobalt, plasma standard solution, Specpure®, C0 10µg/ml

Revision Date 30-Nov-2024

Switzerland - Storage of hazardous substances

<https://www.kvu.ch/de/themen/stoffe-und-produkte>
<https://www.kvu.ch/fr/themes/substances-et-produits>
<https://www.kvu.ch/it/temi/sostanze-e-prodotti> Storage class - SC 10/12

7.3. Specific end use(s)

Use in laboratories

Section 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits

List source(s): **EU** - Commission Directive (EU) 2019/1831 of 24 October 2019 establishing a fifth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC and amending Commission Directive 2000/39/EC **UK** - EH40/2005 Work Exposure Limits, Forth edition. Published 2020. **IRE** - 2010 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001. Published by the Health and Safety Authority. **CH** - The Government of Switzerland has set a directive on limit values for working materials (Grenzwerte am Arbeitsplatz) which is based on the Swiss Federal Regulation "Verordnung über die Verhütung von Unfällen und Berufskrankheiten". This directive is administered, periodically revised and enforced by SUVA (Swiss National Accident Insurance Fund).

Component	European Union	The United Kingdom	France	Belgium	Spain
Nitric acid	STEL: 1 ppm (15min) STEL: 2.6 mg/m ³ (15min)	STEL: 1 ppm 15 min STEL: 2.6 mg/m ³ 15 min	STEL / VLCT: 1 ppm. indicative limit STEL / VLCT: 2.6 mg/m ³ . indicative limit	STEL: 1 ppm 15 minuten STEL: 2.6 mg/m ³ 15 minuten	STEL / VLA-EC: 1 ppm (15 minutos). STEL / VLA-EC: 2.6 mg/m ³ (15 minutos).
Cobalt		STEL: 0.3 mg/m ³ 15 min TWA: 0.1 mg/m ³ 8 hr Resp. Sens.		TWA: 0.02 mg/m ³ 8 uren	TWA / VLA-ED: 0.02 mg/m ³ (8 horas)

Component	Italy	Germany	Portugal	The Netherlands	Finland
Nitric acid	STEL: 1 ppm 15 minuti. Short-term STEL: 2.6 mg/m ³ 15 minuti. Short-term	TWA: 1 ppm (8 Stunden). AGW - TWA: 2.6 mg/m ³ (8 Stunden). AGW -	STEL: 1 ppm 15 minutos STEL: 2.6 mg/m ³ 15 minutos TWA: 2 ppm 8 horas	STEL: 0.5 ppm 15 minuten STEL: 1.3 mg/m ³ 15 minuten	TWA: 0.5 ppm 8 tunteina TWA: 1.3 mg/m ³ 8 tunteina STEL: 1 ppm 15 minuutteina STEL: 2.6 mg/m ³ 15 minuutteina
Cobalt		Haut	TWA: 0.02 mg/m ³ 8 horas	TWA: 0.02 mg/m ³ 8 uren	TWA: 0.02 mg/m ³ 8 tunteina

Component	Austria	Denmark	Switzerland	Poland	Norway
Nitric acid	MAK-KZGW: 1 ppm 15 Minuten MAK-KZGW: 2.6 mg/m ³ 15 Minuten	STEL: 1 ppm 15 minutter STEL: 2.6 mg/m ³ 15 minutter	STEL: 2 ppm 15 Minuten STEL: 5 mg/m ³ 15 Minuten TWA: 2 ppm 8 Stunden TWA: 5 mg/m ³ 8 Stunden	STEL: 2.6 mg/m ³ 15 minutach TWA: 1.4 mg/m ³ 8 godzinach	TWA: 2 ppm 8 timer TWA: 5 mg/m ³ 8 timer STEL: 4 ppm 15 minutter. value calculated STEL: 10 mg/m ³ 15 minutter. value calculated
Cobalt	TRK-KZGW: 2 mg/m ³ 15 Minuten TRK-KZGW: 0.4 mg/m ³ 15 Minuten Haut TRK-TMW: 0.5 mg/m ³ TRK-TMW: 0.1 mg/m ³	TWA: 0.01 mg/m ³ 8 timer STEL: 0.02 mg/m ³ 15 minutter	Haut/Peau TWA: 0.05 mg/m ³ 8 Stunden	TWA: 0.02 mg/m ³ 8 godzinach	TWA: 0.02 mg/m ³ 8 timer STEL: 0.06 mg/m ³ 15 minutter. value calculated fume

Component	Bulgaria	Croatia	Ireland	Cyprus	Czech Republic
Nitric acid	STEL : 1 ppm	STEL-KGVI: 1 ppm 15	STEL: 1 ppm 15 min	STEL: 1 ppm	TWA: 1 mg/m ³ 8

SAFETY DATA SHEET

Cobalt, plasma standard solution, Specpure®, C0 10µg/ml

Revision Date 30-Nov-2024

	STEL : 2.6 mg/m ³	minutama. STEL-KGVI: 2.6 mg/m ³ 15 minutama.	STEL: 2.6 mg/m ³ 15 min	STEL: 2.6 mg/m ³	hodinách. Ceiling: 2.5 mg/m ³
Cobalt	TWA: 0.1 mg/m ³	TWA-GVI: 0.1 mg/m ³ 8 satima.	TWA: 0.02 mg/m ³ 8 hr. STEL: 0.3 mg/m ³ 15 min		TWA: 0.05 mg/m ³ 8 hodinách. inhalable fraction of aerosol Ceiling: 0.1 mg/m ³

Component	Estonia	Gibraltar	Greece	Hungary	Iceland
Nitric acid	STEL: 1 ppm 15 minutites. STEL: 2.6 mg/m ³ 15 minutites.	STEL: 1 ppm 15 min STEL: 2.6 mg/m ³ 15 min	STEL: 1 ppm STEL: 2.6 mg/m ³	STEL: 2.6 mg/m ³ 15 percekben. CK STEL: 1 ppm 15 percekben. CK	STEL: 1 ppm STEL: 2.6 mg/m ³
Cobalt	TWA: 0.05 mg/m ³ 8 tundides.		TWA: 0.1 mg/m ³	TWA: 0.02 mg/m ³ 8 óraban. AK	TWA: 0.02 mg/m ³ 8 klukkustundum. dust and fume Ceiling: 0.04 mg/m ³ dust and fume

Component	Latvia	Lithuania	Luxembourg	Malta	Romania
Nitric acid	STEL: 1 ppm STEL: 2.6 mg/m ³ TWA: 0.78 ppm TWA: 2 mg/m ³	STEL: 1 ppm STEL: 2.6 mg/m ³	STEL: 1 ppm 15 Minuten STEL: 2.6 mg/m ³ 15 Minuten	STEL: 1 ppm 15 minuti STEL: 2.6 mg/m ³ 15 minuti	STEL: 1 ppm 15 minute STEL: 2.6 mg/m ³ 15 minute
Cobalt	TWA: 0.5 mg/m ³	TWA: 0.05 mg/m ³ IPRD			TWA: 0.05 mg/m ³ 8 ore STEL: 0.1 mg/m ³ 15 minute

Component	Russia	Slovak Republic	Slovenia	Sweden	Turkey
Nitric acid	Skin notation MAC: 2 mg/m ³	Ceiling: 2.6 mg/m ³	TWA: 1 ppm 8 urah TWA: 2.6 mg/m ³ 8 urah STEL: 1 ppm 15 minutah STEL: 2.6 mg/m ³ 15 minutah	Binding STEL: 1 ppm 15 minuter Binding STEL: 2.6 mg/m ³ 15 minuter TLV: 0.5 ppm 8 timmar. NGV TLV: 1.3 mg/m ³ 8 timmar. NGV	STEL: 1 ppm 15 dakika STEL: 2.6 mg/m ³ 15 dakika
Cobalt	TWA: 0.01 mg/m ³ 1108 Skin notation MAC: 0.05 mg/m ³	TWA: 0.05 mg/m ³		TLV: 0.02 mg/m ³ 8 timmar. NGV Hud	

Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Component	European Union	United Kingdom	France	Spain	Germany
Cobalt			Cobalt: blood end of shift at end of workweek Cobalt: 0,005 mg/g creatinine urine end of shift at end of workweek	Cobalt: 15 µg/L urine end of workweek Cobalt: 1 µg/L blood end of workweek	

Component	Italy	Finland	Denmark	Bulgaria	Romania
Cobalt		Cobalt: 130 nmol/L urine after the work phase or shift after a working week or exposure period.			Cobalt: 15 µg/L urine end of work week Cobalt: 1 µg/L blood end of work week

Component	Gibraltar	Latvia	Slovak Republic	Luxembourg	Turkey
Cobalt			Cobalt: 30 µg/L urine not critical		

Monitoring methods

MDHS 91 Metals and metalloids in workplace air by X-ray fluorescence spectrometry

MDHS 99 Metals in air by ICP-AES

SAFETY DATA SHEET

Cobalt, plasma standard solution, Specpure®, C0 10µg/ml

Revision Date 30-Nov-2024

Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)

No information available

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Cobalt 7440-48-4 (0.001)			DNEL = 40µg/m ³	

Predicted No Effect Concentration (PNEC)

No information available.

Component	Fresh water	Fresh water sediment	Water Intermittent	Microorganisms in sewage treatment	Soil (Agriculture)
Cobalt 7440-48-4 (0.001)	PNEC = 0.62µg/L	PNEC = 53.8mg/kg sediment dw		PNEC = 0.37mg/L	PNEC = 10.9mg/kg soil dw

Component	Marine water	Marine water sediment	Marine water Intermittent	Food chain	Air
Cobalt 7440-48-4 (0.001)	PNEC = 2.36µg/L	PNEC = 69.8mg/kg sediment dw			

8.2. Exposure controls

Engineering Measures

Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection

Goggles (European standard - EN 166)

Hand Protection

Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Natural rubber	See manufacturers	-	EN 374	(minimum requirement)
Nitrile rubber	recommendations			
Neoprene				
PVC				

Skin and body protection

Long sleeved clothing.

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

Large scale/emergency use

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

Recommended Filter type: Particulates filter conforming to EN 143

SAFETY DATA SHEET

Cobalt, plasma standard solution, Specpure®, C0 10µg/ml

Revision Date 30-Nov-2024

Small scale/Laboratory use Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Recommended half mask:- Particle filtering: EN149:2001
When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls No information available.

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical State	Liquid	
Appearance		
Odor	No information available	
Odor Threshold	No data available	
Melting Point/Range	No data available	
Softening Point	No data available	
Boiling Point/Range	No information available	
Flammability (liquid)	No data available	
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	No data available	
Flash Point	No information available	Method - No information available
Autoignition Temperature	No data available	
Decomposition Temperature	No data available	
pH	No information available	
Viscosity	No data available	
Water Solubility	Miscible	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Component	log Pow	
Nitric acid	-2.3	
Cobalt	5	
Vapor Pressure	No data available	
Density / Specific Gravity	No data available	
Bulk Density	Not applicable	Liquid
Vapor Density	No data available	(Air = 1.0)
Particle characteristics	Not applicable (liquid)	

9.2. Other information

Molecular Formula Co in 2% HN O3

Section 10: Stability and reactivity

10.1. Reactivity None known, based on information available

10.2. Chemical stability Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous Polymerization No information available.
Hazardous Reactions None under normal processing.

SAFETY DATA SHEET

Cobalt, plasma standard solution, Specpure®, C0 10µg/ml

Revision Date 30-Nov-2024

10.4. Conditions to avoid

Incompatible products. Excess heat.

10.5. Incompatible materials

Strong bases.

10.6. Hazardous decomposition products

Nitrogen oxides (NOx). Cobalt oxides.

Section 11: Toxicological information

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

Product Information

(a) acute toxicity;

Oral

Based on available data, the classification criteria are not met

Dermal

No data available

Inhalation

No data available

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	-	-	-
Nitric acid	-	-	LC50 = 2500 ppm. (Rat) 1h
Cobalt	LD50 = 6171 mg/kg (Rat)	-	LC50 < 0.05 mg/L (Rat) 4 h

Component	ECHA (RAC) ATE (Oral)	ECHA (RAC) ATE (Dermal)	ECHA (RAC) ATE (Inhalation)
Nitric acid	-	-	ATE = 2.65 mg/L (vapours)

(b) skin corrosion/irritation;

Category 2

(c) serious eye damage/irritation;

Category 2

(d) respiratory or skin sensitization;

Respiratory

No data available

Skin

No data available

(e) germ cell mutagenicity;

No data available

(f) carcinogenicity;

No data available

There are no known carcinogenic chemicals in this product

Component	EU	UK	Germany	IARC
Cobalt	Carc Cat. 1B		Cat. 2	Group 2A

(g) reproductive toxicity;

No data available

(h) STOT-single exposure;

No data available

(i) STOT-repeated exposure;

No data available

Target Organs

No information available.

SAFETY DATA SHEET

Cobalt, plasma standard solution, Specpure®, C0 10µg/ml

Revision Date 30-Nov-2024

(j) aspiration hazard; No data available

Symptoms / effects, both acute and delayed No information available.

11.2. Information on other hazards

Endocrine Disrupting Properties Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

Section 12: Ecological information

12.1. Toxicity

Ecotoxicity effects May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.

Component	Freshwater Fish	Water Flea	Freshwater Algae
Cobalt	LC50: > 100 mg/L, 96h static (Brachydanio rerio)		

12.2. Persistence and degradability Product contains heavy metals. Discharge into the environment must be avoided. Special pre-treatment is necessary based on information available, May persist.

Persistence
Degradation in sewage treatment plant Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

12.3. Bioaccumulative potential May have some potential to bioaccumulate

Component	log Pow	Bioconcentration factor (BCF)
Nitric acid	-2.3	No data available
Cobalt	5	No data available

12.4. Mobility in soil The product is water soluble, and may spread in water systems Will likely be mobile in the environment due to its water solubility. Highly mobile in soils

12.5. Results of PBT and vPvB assessment No data available for assessment.

12.6. Endocrine disrupting properties

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors

12.7. Other adverse effects

Persistent Organic Pollutant This product does not contain any known or suspected substance
Ozone Depletion Potential This product does not contain any known or suspected substance

Section 13: Disposal considerations

13.1. Waste treatment methods

SAFETY DATA SHEET

Cobalt, plasma standard solution, Specpure®, C0 10µg/ml

Revision Date 30-Nov-2024

Waste from Residues/Unused Products	Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.
Contaminated Packaging	Dispose of this container to hazardous or special waste collection point.
European Waste Catalogue (EWC)	According to the European Waste Catalog, Waste Codes are not product specific, but application specific.
Other Information	Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains.
Switzerland - Waste Ordinance	Disposal should be in accordance with applicable regional, national and local laws and regulations. Ordinance on the Avoidance and the Disposal of Waste (Waste Ordinance, ADWO) SR 814.600 https://www.fedlex.admin.ch/eli/cc/2015/891/en

Section 14: Transport information

IMDG/IMO

14.1. UN number	UN3264
14.2. UN proper shipping name Technical Shipping Name	Corrosive liquid, acidic, inorganic, n.o.s. (NITRIC ACID)
14.3. Transport hazard class(es)	8
14.4. Packing group	III

ADR

14.1. UN number	UN3264
14.2. UN proper shipping name Technical Shipping Name	Corrosive liquid, acidic, inorganic, n.o.s. (NITRIC ACID)
14.3. Transport hazard class(es)	8
14.4. Packing group	III

IATA

14.1. UN number	UN3264
14.2. UN proper shipping name Technical Shipping Name	Corrosive liquid, acidic, inorganic, n.o.s. (NITRIC ACID)
14.3. Transport hazard class(es)	8
14.4. Packing group	III

14.5. Environmental hazards	No hazards identified
14.6. Special precautions for user	No special precautions required.
14.7. Maritime transport in bulk according to IMO instruments	Not applicable, packaged goods

Section 15: Regulatory information

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

International Inventories

Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

SAFETY DATA SHEET

Cobalt, plasma standard solution, Specpure®, C0 10µg/ml

Revision Date 30-Nov-2024

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Water	7732-18-5	231-791-2	-	-	X	X	KE-35400	X	-
Nitric acid	7697-37-2	231-714-2	-	-	X	X	KE-25911	X	X
Cobalt	7440-48-4	231-158-0	-	-	X	X	KE-06060	X	-

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Water	7732-18-5	X	ACTIVE	X	-	X	X	X
Nitric acid	7697-37-2	X	ACTIVE	X	-	X	X	X
Cobalt	7440-48-4	X	ACTIVE	X	-	X	X	X

Legend: X - Listed '-' - Not Listed

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Water	7732-18-5	-	-	-
Nitric acid	7697-37-2	-	Use restricted. See entry 75. (see link for restriction details)	-
Cobalt	7440-48-4	-	Use restricted. See entry 30. (see link for restriction details) Use restricted. See entry 28. (see link for restriction details) Use restricted. See entry 75. (see link for restriction details)	-

REACH links

<https://echa.europa.eu/substances-restricted-under-reach>

Seveso III Directive (2012/18/EC)

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements
Water	7732-18-5	Not applicable	Not applicable
Nitric acid	7697-37-2	Not applicable	Not applicable
Cobalt	7440-48-4	Not applicable	Not applicable

Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals

Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

Take note of Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values

SAFETY DATA SHEET

Cobalt, plasma standard solution, Specpure®, C0 10µg/ml

Revision Date 30-Nov-2024

National Regulations

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

WGK Classification Water endangering class = non-hazardous to waters (self classification)

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Nitric acid	WGK1	
Cobalt	WGK 3	Class II : 0.5 mg/m ³ (Massenkonzentration) Krebserzeugende Stoffe - Class I : 0.05 mg/m ³ (Massenkonzentration)

Component	France - INRS (Tables of occupational diseases)
Cobalt	Tableaux des maladies professionnelles (TMP) - RG 65,RG 70,RG 70bis,RG 70ter

Swiss Regulations

Article 4 para. 4 of the Ordinance on the protection of young people in the workplace (SR 822.115) and Article 1 lit. f of the EAER regulation on hazardous work and young people (SR 822.115.2).

Take note on Article 13 Maternity Ordinance (SR 822.111.52) with regards expectant and nursing mothers.

Component	Switzerland - Ordinance on the Reduction of Risk from handling of hazardous substances preparation (SR 814.81)	Switzerland - Ordinance on Incentive Taxes on Volatile Organic Compounds (OVOC)	Switzerland - Ordinance of the Rotterdam Convention on the Prior Informed Consent Procedure
Nitric acid 7697-37-2 (2.00)	Prohibited and Restricted Substances		

15.2. Chemical safety assessment

Chemical Safety Assessment/Reports (CSA/CSR) are not required for mixtures

Section 16: Other information

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

H290 - May be corrosive to metals
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H272 - May intensify fire; oxidizer
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
EUH071 - Corrosive to the respiratory tract

Legend

CAS - Chemical Abstracts Service

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

DNEL - Derived No Effect Level

RPE - Respiratory Protective Equipment

LC50 - Lethal Concentration 50%

NOEC - No Observed Effect Concentration

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer Predicted No Effect Concentration (PNEC)

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

POW - Partition coefficient Octanol:Water

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Revision Date 30-Nov-2024

PBT - Persistent, Bioaccumulative, Toxic

vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road

IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code

OECD - Organisation for Economic Co-operation and Development

BCF - Bioconcentration factor

Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from Ships

ATE - Acute Toxicity Estimate

VOC - (volatile organic compound)

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Physical hazards On basis of test data

Health Hazards Calculation method

Environmental hazards Calculation method

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Prepared By Health, Safety and Environmental Department

Revision Date 30-Nov-2024

Revision Summary Not applicable.

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006. COMMISSION REGULATION (EU) 2020/878 amending Annex II to Regulation (EC) No 1907/2006 .

For Switzerland - Compiled in accordance with the technical provisions referred to in Annex 2, Number 3, ChemO (SR 813.11 - Ordinance on Protection against Dangerous Substances and Preparations).

Disclaimer

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End of Safety Data Sheet