



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

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

### 1.1. Product identifier

Product Code(s)	VHG-ICL1-100
Product Name	CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Tl, Zn @ 1000 µg/mL in 5% HNO <sub>3</sub>
Form	Not applicable
Unique Formula Identifier (UFI)	Y7DR-H03D-D004-E590
Pure substance/mixture	Mixture

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

Recommended use	Laboratory use
Uses advised against	No information available

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

#### Supplier

LGC Limited  
Queens Road  
Teddington  
Middlesex TW11 0LY  
UNITED KINGDOM  
:+44 (0) 20 8943 7000  
Fax :+44 (0) 20 8943 2767  
eMail : gb@lgcstandards.com

Web : [www.lgcstandards.com](http://www.lgcstandards.com)

For further information, please contact

E-mail address [sds-request@lgcgroup.com](mailto:sds-request@lgcgroup.com)

### 1.4. Emergency telephone number

Emergency Telephone For Hazardous Materials or Dangerous Goods Incident  
Spill, Leak, Fire Exposure, or Accident  
Call CHEMTREC:  
USA & Canada 1-800-424-9300



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Tl, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

Rest of the world +1 703-741-5970

Emergency Telephone - §45 - (EC)1272/2008	
Europe	112
Austria	No information available
Bulgaria	
Croatia	
Cyprus	
Czech Republic	
Denmark	
France	
Hungary	
Ireland	
Italy	
Lithuania	
Luxembourg	
Netherlands	
Norway	
Portugal	
Romania	
Slovakia	
Slovenia	
Spain	
Sweden	
Switzerland	

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

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

<b>Skin corrosion/irritation</b>	Category 2 - (H315)
<b>Serious eye damage/eye irritation</b>	Category 1 - (H318)
<b>Carcinogenicity</b>	Category 1B - (H350)
<b>Reproductive toxicity</b>	Category 1A - (H360)
<b>Acute aquatic toxicity</b>	Category 1 - (H400)
<b>Chronic aquatic toxicity</b>	Category 1 - (H410)
<b>Corrosive to metals</b>	Category 1 - (H290)

### 2.2. Label elements

Contains Cobalt; Lead



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Tl, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**



**Signal word**  
Danger

## Hazard statements

H315 - Causes skin irritation  
H318 - Causes serious eye damage  
H350 - May cause cancer  
H360 - May damage fertility or the unborn child  
H410 - Very toxic to aquatic life with long lasting effects  
H290 - May be corrosive to metals  
EUH208 Contains Nickel May produce an allergic reaction.  
EUH071 - Corrosive to the respiratory tract

## Precautionary Statements - EU (§28, 1272/2008)

P201 - Obtain special instructions before use  
P273 - Avoid release to the environment  
P280 - Wear protective gloves/protective clothing/eye protection/face protection  
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 or doctor  
P391 - Collect spillage  
P234 - Keep only in original container  
P406 - Store in corrosive resistant stainless steel container with a resistant inner liner

## 2.3. Other hazards

No information available.

This mixture contains no substance considered to be persistent, bioaccumulating or toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

## Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors.

Chemical name	EU - REACH (1907/2006) - Article 59(1) - Candidate List of Substances of Very High Concern (SVHC) for Authorisation	EU - REACH (1907/2006) - Endocrine Disruptor Assessment List of Substances
Nitric Acid	-	-
Zink (stabilized)	-	-



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Tl, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

Thallium	-	-
Nickel	-	-
Manganese(II) nitrate hexahydrate	-	-
Lead	-	-
Ferric nitrate nonahydrate	-	-
Copper	-	-
Cobalt	-	-
Barium nitrate	-	-
Cadmium	-	-
Beryllium Oxyacetate	-	-
Silver	-	-

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

**Chemical nature** aqueous solution.

Chemical name	Weight-%	REACH registration number	EC No (EU Index No)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Nitric Acid 7697-37-2	3 - <5	-	231-714-2	Met. Corr. 1 (H290) Ox. Liq. 2 (H272) Acute Tox. 3 (H331) Skin Corr. 1A (H314) (EUH071)	Ox. Liq. 2 :: C>=99% Ox. Liq. 3 :: C>=65% Skin Corr. 1A :: C>=20% Skin Corr. 1B :: 5%<=C<20%		
Zink (stabilized) 7440-66-6	0.1 - 1	-	231-175-3	Acute. Tox. 4 (H302) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)			
Thallium 7440-28-0	0.1 - 1	-	231-138-1 (081-001-00-3)	Acute Tox. 2 (H300) Acute Tox. 2 (H330) STOT RE 2 (H373) Aquatic Chronic 4			



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Ti, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

				(H413)			
Nickel 7440-02-0	0.1 - 1	-	231-111-4 (028-002-00 -7)	Skin Sens. 1 (H317) Carc. 2 (H351) STOT RE 1 (H372) Aquatic Chronic 3 (H412)			
Manganese(II) nitrate hexahydrate 17141-63-8	0.1 - 1	-	627-048-0	Ox. Sol. 3 (H272) Skin Corr. 1B (H314) Eye Dam. 1 (H318) STOT RE 2 (H373)			
Lead 7439-92-1	0.1 - 1	-	231-100-4 (082-014-00 -7)	Carc. 2 (H351) Repr. 1A (H360FD) Lact. (H362) STOT RE 1 (H372) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	Repr. 1A :: C>=0.03%	1	10
Ferric nitrate nonahydrate 7782-61-8	0.1 - 1	-	616-509-1	Ox. Sol. 2 (H272) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319)			
Copper 7440-50-8	0.1 - 1	-	231-159-6	Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)			
Cobalt 7440-48-4	0.1 - 1	-	231-158-0 (027-001-00 -9)	Acute Tox. 4 (H302) Eye Irrit. 2 (H319) Resp. Sens. 1 (H334) Skin Sens. 1 (H317) Muta. 2 (H341) Carc. 1B (H350) Repr. 1B (H360F) Aquatic Chronic 2 (H411) EUH071 EUH201			
Barium nitrate 10022-31-8	0.1 - 1	-	233-020-5 (056-002-00 -7)	Ox. Sol. 2 (H272) Acute Tox. 4 (H302) Acute Tox. 4 (H332) Eye Irrit. 2 (H319)			
Cadmium 7440-43-9	<0.1	-	231-152-8 (048-002-00)	Acute Tox. 4 (H302) Acute Tox. 2 (H330)			



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Ti, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

			-0)	Muta. 2 (H341) Carc. 1B (H350) Repr. 2 (H361fd) STOT RE 1 (H372) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)			
Beryllium Oxyacetate 19049-40-2	<0.1	-	242-785-4 (004-002-00 -2)	Acute Tox. 2 (H330) Acute Tox. 3 (H301) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Skin Sens. 1 (H317) Carc. 1B (H350) STOT SE 3 (H335) STOT RE 1 (H372) Aquatic Chronic 2 (H411)			
Silver 7440-22-4	<0.1	-	231-131-3	Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)			

**Full text of H- and EUH-phrases: see section 16**

## Acute Toxicity Estimate

If LD50/LC50 data is not available or does not correspond to the classification category, then the appropriate conversion value from CLP Annex I, Table 3.1.2, is used to calculate the acute toxicity estimate (ATEmix) for classifying a mixture based on its components

Chemical name	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Nitric Acid 7697-37-2	No data available	No data available	No data available	2.65	No data available
Zink (stabilized) 7440-66-6	630	No data available	No data available	No data available	No data available
Nickel 7440-02-0	9000	No data available	No data available	No data available	No data available
Ferric nitrate nonahydrate 7782-61-8	3250	No data available	No data available	No data available	No data available
Cobalt 7440-48-4	6171	No data available	No data available	No data available	No data available
Barium nitrate 10022-31-8	355	No data available	1.1138	No data available	No data available



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Tl, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

Chemical name	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Cadmium 7440-43-9	1140	No data available	No data available	No data available	No data available
Silver 7440-22-4	5000	2000	5.16	No data available	No data available

This product contains one or more candidate substance(s) of very high concern (Regulation (EC) No. 1907/2006 (REACH), Article 59)

Chemical name	CAS No.	SVHC candidates
Lead	7439-92-1	X

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

<b>General advice</b>	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required. IF exposed or concerned: Get medical advice/attention.
<b>Inhalation</b>	Remove to fresh air. Get medical attention immediately if symptoms occur.
<b>Eye contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical attention.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a doctor.
<b>Self-protection of the first aider</b>	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

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

<b>Symptoms</b>	Burning sensation.
-----------------	--------------------

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

<b>Note to doctors</b>	Treat symptomatically.
------------------------	------------------------



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Tl, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

**Suitable Extinguishing Media** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Large Fire** CAUTION: Use of water spray when fighting fire may be inefficient.

**Unsuitable extinguishing media** Do not scatter spilled material with high pressure water streams.

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

**Specific hazards arising from the chemical** No information available.

### 5.3. Advice for firefighters

**Special protective equipment and precautions for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

## SECTION 6: Accidental release measures

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

**Personal precautions** Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required.

**Other information** Refer to protective measures listed in Sections 7 and 8.

**For emergency responders** Use personal protection recommended in Section 8.

### 6.2. Environmental precautions

**Environmental precautions** Prevent further leakage or spillage if safe to do so.

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

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Take up mechanically, placing in appropriate containers for disposal.

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

### 6.4. Reference to other sections





# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Tl, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

**Reference to other sections** See section 8 for more information. See section 13 for more information.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Take off contaminated clothing and wash it before reuse.

**General hygiene considerations** Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work. Wear suitable gloves and eye/face protection.

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

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials. Please refer to the manufacturer's certificate for specific storage and transport temperature conditions. Store only in the original receptacle unless other advice is given on the CoA.

### 7.3. Specific end use(s)

**Risk Management Methods (RMM)** The information required is contained in this Safety Data Sheet.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Exposure Limits

Chemical name	European Union	Austria	Belgium	Bulgaria	Croatia
Nitric Acid 7697-37-2	-	STEL 1 ppm STEL 2.6 mg/m <sup>3</sup>	STEL: 1 ppm STEL: 2.6 mg/m <sup>3</sup>	STEL: 1 ppm STEL: 2.6 mg/m <sup>3</sup>	STEL: 1 ppm STEL: 2.6 mg/m <sup>3</sup>
Thallium 7440-28-0	-	STEL 1 mg/m <sup>3</sup>	TWA: 0.02 mg/m <sup>3</sup> Sk*	TWA: 0.05 mg/m <sup>3</sup>	-
Nickel	-	Sa+	TWA: 1 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Ti, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

7440-02-0		Sh+			Skin Sensitisation
Manganese(II) nitrate hexahydrate 17141-63-8	-	TWA: 0.2 mg/m <sup>3</sup> STEL 1.6 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup>
Lead 7439-92-1	TWA: 0.15 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup> STEL 0.4 mg/m <sup>3</sup>	-	TWA: 0.05 mg/m <sup>3</sup>	TWA: 0.15 mg/m <sup>3</sup>
Ferric nitrate nonahydrate 7782-61-8	-	-	TWA: 1 mg/m <sup>3</sup>	TWA: 1.0 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> STEL: 2 mg/m <sup>3</sup>
Copper 7440-50-8	-	TWA: 1 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup> STEL 4 mg/m <sup>3</sup> STEL 0.4 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> STEL: 2 mg/m <sup>3</sup>
Cobalt 7440-48-4	-	Sk* Sa+ Sh+	TWA: 0.02 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup> Skin Sensitisation Respiratory Sensitisation
Barium nitrate 10022-31-8	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup> STEL 2 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>
Cadmium 7440-43-9	TWA: 0.001 mg/m <sup>3</sup>	-	TWA: 0.01 mg/m <sup>3</sup> TWA: 0.004 mg/m <sup>3</sup>	TWA: 0.004 mg/m <sup>3</sup>	TWA: 0.004 mg/m <sup>3</sup>
Beryllium Oxyacetate 19049-40-2	-	-	TWA: 0,00005 mg/m <sup>3</sup> STEL: 0.01 mg/m <sup>3</sup>	-	TWA: 0.0006 mg/m <sup>3</sup> Sk* Skin Sensitisation
Silver 7440-22-4	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup> STEL 0.1 mg/m <sup>3</sup> Ceiling: 0.1 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>
Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
Nitric Acid 7697-37-2	STEL: 1 ppm STEL: 2.6 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> Ceiling: 2.5 mg/m <sup>3</sup>	STEL: 1 ppm STEL: 2.6 mg/m <sup>3</sup>	STEL: 1 ppm STEL: 2.6 mg/m <sup>3</sup>	TWA: 0.5 ppm TWA: 1.3 mg/m <sup>3</sup> STEL: 1 ppm STEL: 2.6 mg/m <sup>3</sup>
Thallium 7440-28-0	-	TWA: 0.1 mg/m <sup>3</sup> Sk* Ceiling: 0.5 mg/m <sup>3</sup>	Sk*	-	TWA: 0.1 mg/m <sup>3</sup> Sk*
Nickel 7440-02-0	-	TWA: 0.5 mg/m <sup>3</sup> S+ Ceiling: 1 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup> STEL: 0.1 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup> S+	TWA: 0.01 mg/m <sup>3</sup>
Manganese(II) nitrate hexahydrate 17141-63-8	TWA: 0.2 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> Ceiling: 2 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup> STEL: 0.4 mg/m <sup>3</sup> STEL: 0.1 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> TWA: 0.02 mg/m <sup>3</sup>
Lead 7439-92-1	TWA: 0.15 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup> Ceiling: 0.2 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup> STEL: 0.1 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>
Ferric nitrate nonahydrate	-	-	TWA: 1 mg/m <sup>3</sup>	-	TWA: 1 mg/m <sup>3</sup>



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Ti, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

7782-61-8			STEL: 2 mg/m <sup>3</sup>		
Copper 7440-50-8	-	TWA: 1 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup> Ceiling: 2 mg/m <sup>3</sup> Ceiling: 0.2 mg/m <sup>3</sup>	TWA: 1.0 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup> STEL: 2 mg/m <sup>3</sup> STEL: 0.2 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> TWA: 0.2 mg/m <sup>3</sup>	TWA: 0.02 mg/m <sup>3</sup>
Cobalt 7440-48-4	-	TWA: 0.05 mg/m <sup>3</sup> S+ Ceiling: 0.1 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup> STEL: 0.02 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup> S+	TWA: 0.02 mg/m <sup>3</sup>
Barium nitrate 10022-31-8	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup> Ceiling: 2.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup> STEL: 1 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>
Cadmium 7440-43-9	TWA: 0.001 mg/m <sup>3</sup>	TWA: 0.004 mg/m <sup>3</sup> Sk* Ceiling: 0.008 mg/m <sup>3</sup>	TWA: 0.001 mg/m <sup>3</sup> STEL: 0.002 mg/m <sup>3</sup>	TWA: 0.004 mg/m <sup>3</sup>	TWA: 0.004 mg/m <sup>3</sup>
Beryllium Oxyacetate 19049-40-2	-	TWA: 0.001 mg/m <sup>3</sup> Ceiling: 0.002 mg/m <sup>3</sup>	TWA: 0.00002 mg/m <sup>3</sup> STEL: 0.00004 mg/m <sup>3</sup>	-	-
Silver 7440-22-4	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup> Ceiling: 0.3 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup> STEL: 0.02 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>
Chemical name	France	Germany TRGS	Germany DFG	Greece	Hungary
Nitric Acid 7697-37-2	STEL: 1 ppm STEL: 2.6 mg/m <sup>3</sup>	TWA: 1 ppm TWA: 2.6 mg/m <sup>3</sup>	-	STEL: 1 ppm STEL: 2.6 mg/m <sup>3</sup>	STEL: 2.6 mg/m <sup>3</sup> STEL: 1 ppm
Zink (stabilized) 7440-66-6	-	-	TWA: 0.1 mg/m <sup>3</sup> TWA: 2 mg/m <sup>3</sup> Peak: 0.4 mg/m <sup>3</sup> Peak: 4 mg/m <sup>3</sup>	-	-
Thallium 7440-28-0	TWA: 0.1 mg/m <sup>3</sup>	-	-	TWA: 0.1 mg/m <sup>3</sup> Sk*	-
Nickel 7440-02-0	TWA: 1 mg/m <sup>3</sup>	TWA: 0.03 mg/m <sup>3</sup> TWA: 0.006 mg/m <sup>3</sup> Sh+	respiratory and skin sensitizer inhalable fraction, respiratory sensitization confirmed for water soluble Nickel compounds only	TWA: 1 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup> sz+
Manganese(II) nitrate hexahydrate 17141-63-8	-	TWA: 0.2 mg/m <sup>3</sup> TWA: 0.02 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> TWA: 0.02 mg/m <sup>3</sup> Peak: 1.6 mg/m <sup>3</sup> Peak: 0.16 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup>
Lead 7439-92-1	TWA: 0.1 mg/m <sup>3</sup>	-	TWA: 0.004 mg/m <sup>3</sup> Peak: 0.032 mg/m <sup>3</sup>	TWA: 0.15 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup>
Ferric nitrate nonahydrate 7782-61-8	-	-	-	TWA: 1 mg/m <sup>3</sup> STEL: 2 mg/m <sup>3</sup>	-
Copper	TWA: 0.2 mg/m <sup>3</sup>	-	TWA: 0.01 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Ti, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

7440-50-8	TWA: 1 mg/m <sup>3</sup> STEL: 2 mg/m <sup>3</sup>		Peak: 0.02 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> STEL: 2 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup> STEL: 0.2 mg/m <sup>3</sup>
Cobalt 7440-48-4	-	-	Sk* respiratory and skin sensitizer	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.02 mg/m <sup>3</sup> Sz+
Barium nitrate 10022-31-8	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup> Peak: 4 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>
Cadmium 7440-43-9	TWA: 0.004 mg/m <sup>3</sup>	TWA: 0.002 mg/m <sup>3</sup>	Sk*	TWA: 0.001 mg/m <sup>3</sup>	TWA: 0.004 mg/m <sup>3</sup>
Beryllium Oxyacetate 19049-40-2	TWA: 0.0006 mg/m <sup>3</sup>	-	-	TWA: 0.005 mg/m <sup>3</sup>	TWA: 0.0006 mg/m <sup>3</sup> Sk*
Silver 7440-22-4	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup> Peak: 0.8 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>
Chemical name	Ireland	Italy MDLPS	Italy AIDII	Latvia	Lithuania
Nitric Acid 7697-37-2	STEL: 1 ppm STEL: 2.6 mg/m <sup>3</sup>	STEL: 1 ppm STEL: 2.6 mg/m <sup>3</sup>	TWA: 2 ppm TWA: 5.2 mg/m <sup>3</sup> STEL: 4 ppm STEL: 10.3 mg/m <sup>3</sup>	TWA: 0.78 ppm TWA: 2 mg/m <sup>3</sup> STEL: 1 ppm STEL: 2.6 mg/m <sup>3</sup>	STEL: 1 ppm STEL: 2.6 mg/m <sup>3</sup>
Thallium 7440-28-0	TWA: 0.02 mg/m <sup>3</sup> STEL: 0.06 mg/m <sup>3</sup> Sk*	-	TWA: 0.02 mg/m <sup>3</sup> Sk*	-	-
Nickel 7440-02-0	TWA: 0.5 mg/m <sup>3</sup> STEL: 1.5 mg/m <sup>3</sup> Sens+	-	TWA: 1.5 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup> J+
Manganese(II) nitrate hexahydrate 17141-63-8	TWA: 0.2 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup> STEL: 0.6 mg/m <sup>3</sup> STEL: 0.15 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup>
Lead 7439-92-1	TWA: 0.15 mg/m <sup>3</sup> STEL: 0.45 mg/m <sup>3</sup>	TWA: 0.15 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup> STEL: 0.1 mg/m <sup>3</sup>	TWA: 0.15 mg/m <sup>3</sup> TWA: 0.07 mg/m <sup>3</sup>
Ferric nitrate nonahydrate 7782-61-8	TWA: 1 mg/m <sup>3</sup> STEL: 2 mg/m <sup>3</sup>	-	TWA: 1 mg/m <sup>3</sup>	-	-
Copper 7440-50-8	TWA: 0.2 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> STEL: 2 mg/m <sup>3</sup> STEL: 0.6 mg/m <sup>3</sup>	-	TWA: 0.2 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup> STEL: 1 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> TWA: 0.2 mg/m <sup>3</sup>
Cobalt 7440-48-4	TWA: 0.02 mg/m <sup>3</sup> STEL: 0.3 mg/m <sup>3</sup> Sens+	-	TWA: 0.02 mg/m <sup>3</sup> senR+ senD+	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup> J+
Barium nitrate 10022-31-8	TWA: 0.5 mg/m <sup>3</sup> STEL: 1.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup> Sk*	TWA: 0.5 mg/m <sup>3</sup>
Cadmium 7440-43-9	TWA: 0.001 mg/m <sup>3</sup> TWA: 0.004 mg/m <sup>3</sup> STEL: 0.003 mg/m <sup>3</sup>	TWA: 0.001 mg/m <sup>3</sup> TWA: 0.004 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup>	TWA: 0.001 mg/m <sup>3</sup>	TWA: 0.004 mg/m <sup>3</sup>



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Ti, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

	STEL: 0.012 mg/m <sup>3</sup>				
Beryllium Oxyacetate 19049-40-2	TWA: 0.0002 mg/m <sup>3</sup> STEL: 0.0006 mg/m <sup>3</sup> Sk* Sens+	-	TWA: 0.00005 mg/m <sup>3</sup>	TWA: 0.001 mg/m <sup>3</sup>	-
Silver 7440-22-4	TWA: 0.1 mg/m <sup>3</sup> STEL: 0.3 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>
Chemical name	Luxembourg	Malta	Netherlands	Norway	Poland
Nitric Acid 7697-37-2	STEL: 1 ppm STEL: 2.6 mg/m <sup>3</sup>	STEL: 1 ppm STEL: 2.6 mg/m <sup>3</sup>	STEL: 0.5 ppm STEL: 1.3 mg/m <sup>3</sup>	TWA: 2 ppm TWA: 5 mg/m <sup>3</sup> STEL: 4 ppm STEL: 10 mg/m <sup>3</sup>	TWA: 1.4 mg/m <sup>3</sup> STEL: 2.6 mg/m <sup>3</sup>
Thallium 7440-28-0	-	-	-	TWA: 0.1 mg/m <sup>3</sup> STEL: 0.3 mg/m <sup>3</sup> Sk*	TWA: 0.1 mg/m <sup>3</sup> STEL: 0.3 mg/m <sup>3</sup>
Nickel 7440-02-0	-	-	-	TWA: 0.05 mg/m <sup>3</sup> STEL: 0.15 mg/m <sup>3</sup> A+	TWA: 0.25 mg/m <sup>3</sup>
Manganese(II) nitrate hexahydrate 17141-63-8	TWA: 0.2 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup>	-	TWA: 0.2 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup> STEL: 0.6 ppm STEL: 0.15 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup>
Lead 7439-92-1	TWA: 0.15 mg/m <sup>3</sup>	-	TWA: 0.15 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup> STEL: 0.15 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup>
Ferric nitrate nonahydrate 7782-61-8	-	-	-	TWA: 1 mg/m <sup>3</sup> STEL: 3 mg/m <sup>3</sup>	-
Copper 7440-50-8	-	-	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> STEL: 3 mg/m <sup>3</sup> STEL: 0.3 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup>
Cobalt 7440-48-4	-	-	TWA: 0.02 mg/m <sup>3</sup>	TWA: 0.02 mg/m <sup>3</sup> STEL: 0.06 mg/m <sup>3</sup> A+	TWA: 0.02 mg/m <sup>3</sup>
Barium nitrate 10022-31-8	TWA: 0.5 mg/m <sup>3</sup>	-	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup> STEL: 1.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>
Cadmium 7440-43-9	-	-	TWA: 0.004 mg/m <sup>3</sup>	TWA: 0.001 mg/m <sup>3</sup> STEL: 0.003 mg/m <sup>3</sup>	TWA: 0.004 mg/m <sup>3</sup>
Beryllium Oxyacetate 19049-40-2	-	-	Sk*	-	-
Silver 7440-22-4	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup> STEL: 0.3 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup>
Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
Nitric Acid 7697-37-2	TWA: 2 ppm STEL: 1 ppm	STEL: 1 ppm STEL: 2.6 mg/m <sup>3</sup>	Ceiling: 2.6 mg/m <sup>3</sup>	TWA: 1 ppm TWA: 2.6 mg/m <sup>3</sup>	STEL: 1 ppm STEL: 2.6 mg/m <sup>3</sup>



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Ti, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

	STEL: 2.6 mg/m <sup>3</sup>			STEL: 1 ppm STEL: 2.6 mg/m <sup>3</sup>	
Zink (stabilized) 7440-66-6	-	-	TWA: 0.1 mg/m <sup>3</sup> TWA: 2 mg/m <sup>3</sup>	-	-
Thallium 7440-28-0	TWA: 0.02 mg/m <sup>3</sup> Sk*	-	TWA: 0.1 mg/m <sup>3</sup>	-	TWA: 0.1 mg/m <sup>3</sup> Sk*
Nickel 7440-02-0	TWA: 1.5 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup> STEL: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup> STEL: 0.05 mg/m <sup>3</sup> S+	TWA: 0.006 mg/m <sup>3</sup> STEL: 0.048 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> Sen+
Manganese(II) nitrate hexahydrate 17141-63-8	TWA: 0.2 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup> STEL: 0.4 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> TWA: 0.05 mg/m <sup>3</sup>
Lead 7439-92-1	TWA: 0.05 mg/m <sup>3</sup>	TWA: 0.15 mg/m <sup>3</sup>	TWA: 0.15 mg/m <sup>3</sup> TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup> STEL: 0.4 mg/m <sup>3</sup>	TWA: 0.15 mg/m <sup>3</sup>
Ferric nitrate nonahydrate 7782-61-8	TWA: 1 mg/m <sup>3</sup>	-	-	-	TWA: 1 mg/m <sup>3</sup>
Copper 7440-50-8	TWA: 0.2 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup> STEL: 0.2 mg/m <sup>3</sup> STEL: 1.5 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> TWA: 0.2 mg/m <sup>3</sup>	-	TWA: 0.01 mg/m <sup>3</sup>
Cobalt 7440-48-4	TWA: 0.02 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup> STEL: 0.1 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup> S+	-	TWA: 0.02 mg/m <sup>3</sup> Sen+
Barium nitrate 10022-31-8	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup> STEL: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup>
Cadmium 7440-43-9	TWA: 0.001 mg/m <sup>3</sup> TWA: 0.004 mg/m <sup>3</sup>	TWA: 0.001 mg/m <sup>3</sup>	TWA: 0.03 mg/m <sup>3</sup> TWA: 0.15 mg/m <sup>3</sup> STEL: 0.15 mg/m <sup>3</sup> STEL: 0.75 mg/m <sup>3</sup>	TWA: 0.004 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup> TWA: 0.002 mg/m <sup>3</sup>
Beryllium Oxyacetate 19049-40-2	STEL: 0.01 mg/m <sup>3</sup>	TWA: 0.0002 mg/m <sup>3</sup>	TWA: 0.005 mg/m <sup>3</sup> TWA: 0.002 mg/m <sup>3</sup> STEL: 0.025 mg/m <sup>3</sup> STEL: 0.01 mg/m <sup>3</sup>	-	TWA: 0.0002 mg/m <sup>3</sup>
Silver 7440-22-4	TWA: 0.01 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.01 mg/m <sup>3</sup> STEL: 0.02 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>
Chemical name	Sweden		Switzerland		United Kingdom
Nitric Acid 7697-37-2	NGV: 0.5 ppm NGV: 1.3 mg/m <sup>3</sup> Bindande KGV: 1 ppm Bindande KGV: 2.6 mg/m <sup>3</sup>		TWA: 2 ppm TWA: 5 mg/m <sup>3</sup> STEL: 2 ppm STEL: 5 mg/m <sup>3</sup>		STEL: 1 ppm STEL: 2.6 mg/m <sup>3</sup>
Thallium 7440-28-0	-		TWA: 0.1 mg/m <sup>3</sup> Sk*		-
Nickel 7440-02-0	NGV: 0.5 mg/m <sup>3</sup> S+		TWA: 0.5 mg/m <sup>3</sup> S+		TWA: 0.5 mg/m <sup>3</sup> STEL: 1.5 mg/m <sup>3</sup> Sk*
Manganese(II) nitrate	NGV: 0.2 mg/m <sup>3</sup>		TWA: 0.2 mg/m <sup>3</sup>		TWA: 0.2 mg/m <sup>3</sup>



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Ti, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

hexahydrate 17141-63-8	NGV: 0.05 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.05 mg/m <sup>3</sup> STEL: 0.6 mg/m <sup>3</sup> STEL: 0.15 mg/m <sup>3</sup>
Lead 7439-92-1	NGV: 0.1 mg/m <sup>3</sup> NGV: 0.05 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup> STEL: 0.8 mg/m <sup>3</sup>	TWA: 0.15 mg/m <sup>3</sup> STEL: 0.45 mg/m <sup>3</sup>
Ferric nitrate nonahydrate 7782-61-8	-	TWA: 1 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> STEL: 2 mg/m <sup>3</sup>
Copper 7440-50-8	NGV: 0.01 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup> STEL: 0.2 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> TWA: 0.2 mg/m <sup>3</sup> STEL: 0.6 mg/m <sup>3</sup> STEL: 2 mg/m <sup>3</sup>
Cobalt 7440-48-4	NGV: 0.02 mg/m <sup>3</sup> Sk* S+	TWA: 0.05 mg/m <sup>3</sup> Sk* S+	TWA: 0.1 mg/m <sup>3</sup> STEL: 0.3 mg/m <sup>3</sup> Sen+
Barium nitrate 10022-31-8	NGV: 0.5 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup> STEL: 4 mg/m <sup>3</sup>	TWA: 0.5 mg/m <sup>3</sup> STEL: 1.5 mg/m <sup>3</sup>
Cadmium 7440-43-9	NGV: 0.001 mg/m <sup>3</sup> NGV: 0.004 mg/m <sup>3</sup>	TWA: 0.001 mg/m <sup>3</sup> Sk*	TWA: 0.025 mg/m <sup>3</sup> STEL: 0.075 mg/m <sup>3</sup>
Beryllium Oxyacetate 19049-40-2	NGV: 0.0002 mg/m <sup>3</sup> NGV: 0.0006 mg/m <sup>3</sup> S+	TWA: 0.0006 mg/m <sup>3</sup> S+	TWA: 0.002 mg/m <sup>3</sup> STEL: 0.006 mg/m <sup>3</sup>
Silver 7440-22-4	NGV: 0.1 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup> STEL: 0.8 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup> STEL: 0.3 mg/m <sup>3</sup>

## Biological occupational exposure limits

Chemical name	European Union	Austria	Bulgaria	Croatia	Czech Republic
Nickel 7440-02-0	-	Check 7 µg/L (urine - spontaneous urine after end of work day, at the end of a work week/end of the shift) ( - )	45 µg/L - urine (Nickel) - after several work shifts	10 µg/L - plasma (Nickel) - at the end of the work shift 8 µg/g Creatinine - urine (Nickel) - at the end of the work shift	0.077 µmol/mmol Creatinine (urine - Nickel discretionary) 0.04 mg/g Creatinine (urine - Nickel discretionary)
Manganese(II) nitrate hexahydrate 17141-63-8	-	Check 20 µg/L (blood - whole blood not provided) ( - )	-	-	-
Lead 7439-92-1	70 µg/100 mL - blood (Lead) - no	Check 120 µg/100 mL RBC	300 µg/L - blood (Lead) - not fixed	400 µg Pb/L - blood (Lead) - not critical	13 µmol/mmol Creatinine (urine -



## SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Ti, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

	restriction 0.075 mg/m <sup>3</sup> - air (Lead) - 40 hours per week 40 µg/100 mL - blood (Lead) - no restriction	Erythrocyte protoporphyrin (blood - Ethylenediaminetetr aacetic acid not provided) 30 µg/100 mL blood Lead (blood - Ethylenediaminetetr aacetic acid not provided) 3.8 million/µL Erythrocytes (blood - Ethylenediaminetetr aacetic acid not provided) 12 g/dL Hemoglobin (blood - Ethylenediaminetetr aacetic acid not provided) 35 % Hematocrit (blood - Ethylenediaminetetr aacetic acid not provided) 10 mg/L (urine - .delta.-Aminolevulini c acid not provided) 3.2 million/µL Erythrocytes (blood - Ethylenediaminetetr aacetic acid not provided) 10 g/dL Hemoglobin (blood - Ethylenediaminetetr aacetic acid not provided) 30 % Hematocrit (blood - Ethylenediaminetetr aacetic acid not provided) 6 mg/L (urine -	400 µg/L - blood (Lead) - not fixed	300 µg Pb/L - blood (Lead) - not critical 15 U/LE - blood (.delta.-Aminolevulin ic acid dehydratase) - not critical 1.50 mg/LE - blood (Protoporphyrin in erythrocytes) - after exposure during 2-3 months (sample protected from light)	5-Aminolevulinic acid discretionary) 0.035 µmol/mmol Creatinine (urine - Coproporphyrin discretionary) 15 mg/g Creatinine (urine - 5-Aminolevulinic acid discretionary) 0.2 mg/g Creatinine (urine - Coproporphyrin discretionary) 0.4 mg/L (blood - Lead discretionary)
--	---	--	--	---	---





## SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Tl, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

		.delta.-Aminolevulinic acid not provided)			
Cobalt 7440-48-4	-	Check 10 µg/L (urine - spontaneous urine after end of work day, at the end of a work week/end of the shift) ( - )	-	-	-
Cadmium 7440-43-9	-	Check 2.5 µg/g Creatinine (urine - N-Acetylglucosaminidase not provided) ( - )	-	5 µg/L - blood (Cadmium) - not critical 5 µg/g Creatinine - urine (Cadmium) - single sample or urine collected over 24 hours	0.005 µmol/mmol Creatinine (urine - Cadmium discretionary) 0.005 mg/g Creatinine (urine - Cadmium discretionary) 0.045 µmol/L (blood - Cadmium discretionary) 0.005 mg/L (blood - Cadmium discretionary)
Chemical name	Denmark	Finland	France	Germany DFG	Germany TRGS
Nickel 7440-02-0	-	0.1 µmol/L (urine - Nickel after the shift after a working week or exposure period)	-	3 µg/L - BAR (for long-term exposures: at the end of the shift after several shifts) urine 15 µg/L - (long-term exposure: at the end of the shift after several shifts) - urine 30 µg/L - (long-term exposure: at the end of the shift after several shifts) - urine 45 µg/L - (long-term exposure: at the end of the shift after several shifts) - urine	-
Manganese(II) nitrate hexahydrate 17141-63-8	-	-	-	15 µg/L - BAR (no restriction in steady state) blood	-



## SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Tl, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

Lead 7439-92-1	20 µg/100 mL (blood - Lead )	1.4 µmol/L (blood - Lead time of day does not matter) 50 µg/dL (blood - Lead ) 40 µg/dL (blood - Lead )	400 µg/L - blood (Lead) - 180 µg/L - blood (Lead) - indifferent sampling time 300 µg/L - blood (Lead) - 200 µg/L - blood (Lead) - 100 µg/L - blood (Lead) -	150 µg/L (whole blood - Lead no restriction) 150 µg/L - BAT (no restriction in steady state) blood 30 µg/L - BAR (no restriction in steady state) blood 40 µg/L - BAR (no restriction in steady state) blood	150 µg/L (whole blood - Lead no restriction)
Cobalt 7440-48-4	-	130 nmol/L (urine - Cobalt after the work phase or shift after a working week or exposure period)	- blood (Cobalt) - end of shift at end of workweek 0,005 mg/g creatinine - urine (Cobalt) - end of shift at end of workweek	35 µg/L - BLW (for long-term exposures: at the end of the shift after several shifts) urine 1.5 µg/L - BAR (for long-term exposures: at the end of the shift after several shifts) urine 6 µg/L - (long-term exposure: at the end of the shift after several shifts) - urine 15 µg/L - (long-term exposure: at the end of the shift after several shifts) - urine 30 µg/L - (long-term exposure: at the end of the shift after several shifts) - urine 60 µg/L - (long-term exposure: at the end of the shift after several shifts) - urine 300 µg/L - (long-term exposure: at the end of the shift after several shifts) - urine 3 µg/L - (long-term exposure: at the end	-



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Ti, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

				of the shift after several shifts) - urine	
Barium nitrate 10022-31-8	-	-	-	10 µg/L - BAR (for long-term exposures: at the end of the shift after several shifts) urine	-
Cadmium 7440-43-9	-	20 nmol/L (urine - Cadmium at the end of a working week; time of day does not matter)	0.005 mg/g creatinine - urine (Cadmium) - not critical 0.004 mg/L - blood (Cadmium) - not critical	1 µg/L - BAR (no restriction in steady state) blood 0.8 µg/L - BAR (no restriction in steady state) urine	-
Chemical name	Hungary	Ireland	Italy MDLPS	Italy AIDII	
Nickel 7440-02-0	0.003 mg/L (urine - Nickel at end of workweek, end of shift) 0.051 µmol/L (urine - Nickel at end of workweek, end of shift)	3 µg/L (urine - Nickel after several consecutive working shifts)	-	-	
Lead 7439-92-1	-	70 µg/100 mL (blood - Lead not critical) 40 µg/100 mL (blood - Lead not critical) 30 µg/100 mL (blood - Lead not critical)	60 Pb µg/100 mL (blood - end of workweek)	30 µg/100 mL - blood (Lead) - not critical	
Cobalt 7440-48-4	0.01 mg/g Creatinine (urine - Cobalt end of shift) 0.019 µmol/mmol Creatinine (urine - Cobalt end of shift)	15 µg/L (urine - Cobalt end of shift at end of workweek) 1 µg/L (blood - Cobalt end of shift at end of workweek)	-	15 µg/L - urine (Cobalt) - end of shift at end of workweek	
Cadmium 7440-43-9	0.02 mg/g Creatinine (urine - Cadmium not critical) 0.02 µmol/mmol Creatinine (urine - Cadmium not critical)	2 µg/g Creatinine (urine - not critical)	-	5 µg/g Creatinine - urine (Cadmium) - not critical 5 µg/L - blood (Cadmium) - not critical	
Chemical name	Latvia	Luxembourg	Romania	Slovakia	
Nickel 7440-02-0	3 µg/L - urine (Nickel) -	-	3 µg/L - urine (Nickel) - end of shift	0.03 mg/L (blood - Nickel end of exposure or work shift)	
Lead	30 µg/100 mL - blood	70 µg/100 mL - blood	150 µg/L - urine (Lead) -	400 µg/L (blood - Lead	



## SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Tl, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

7439-92-1	(Lead) - 100 µg/g Creatinine - urine (Coprotoporphyrin) - 5 mg/g Creatinine - urine (Aminolevulinic acid) -	(Lead) - 0.072 mg/m <sup>3</sup> - blood (Lead) - 40 µg/100 mL - blood (Lead) -	end of shift 70 µg/100 mL - blood (Lead) - end of shift 3 mg/cm - hair (Lead) - end of shift 10 mg/L - urine (.delta.-Aminolevulinic acid) - end of shift 300 µg/L - urine (Coprotoporphyrin) - end of shift 100 µg/100 mL Erythrocyte - blood (free Erythrocytes protoporphyrin) - end of shift	not critical) 100 µg/L (blood - Lead not critical) 15 mg/L (urine - .delta.-Aminolevulinic acid not critical) 6 mg/L (urine - .delta.-Aminolevulinic acid not critical) 0.30 mg/L (urine - Coprotoporphyrins not critical)
Cobalt 7440-48-4	-	-	15 µg/L - urine (Cobalt) - end of work week 1 µg/L - blood (Cobalt) - end of work week	30 µg/L (urine - Cobalt not critical)
Cadmium 7440-43-9	2 µg/L - urine (Cadmium) -	-	2 µg/g Creatinine - urine (Cadmium) - end of shift 5 µg/L - blood (Cadmium) - end of shift 2 mg/L - urine (Protein) - end of shift	3.1 µg/L (urine - Cadmium not critical)
Chemical name	Slovenia	Spain	Switzerland	United Kingdom
Nickel 7440-02-0	-	-	45 µg/L (urine - Nickel end of shift, and after several shifts (for long-term exposures)) 766.6 nmol/L (urine - Nickel end of shift, and after several shifts (for long-term exposures))	-
Lead 7439-92-1	400 µg/L - blood (Lead) - not relevant 300 µg/L - blood (Lead) - not relevant	70 µg/dL (blood - Lead not critical)	400 µg/L (whole blood - Lead no restrictions) 1.93 µmol/L (whole blood - Lead no restrictions) 100 µg/L (whole blood - Lead no restrictions) 0.48 µmol/L (whole blood - Lead no restrictions)	-
Cobalt 7440-48-4	-	15 µg/L (urine - Cobalt end of workweek)	30 µg/L (urine - Cobalt end of shift)	-



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Ti, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

		1 µg/L (blood - Cobalt end of workweek)	509 nmol/L (urine - Cobalt end of shift)	
Cadmium 7440-43-9	-	2 µg/g Creatinine (urine - Cadmium not critical) 5 µg/L (blood - Cadmium not critical)	2 µg/g creatinine (urine - Cadmium no restrictions) 2.01 nmol/mmol creatinine (urine - Cadmium no restrictions)	-

**Derived No Effect Level (DNEL)** No information available.

**Predicted No Effect Concentration (PNEC)** No information available.

## 8.2. Exposure controls

### Personal protective equipment

**Eye/face protection** Tight sealing safety goggles. Avoid contact with eyes. Wear safety glasses with side shields (or goggles).

**Hand protection** Wear protective Neoprene™ gloves. Wear suitable gloves. Impervious gloves. The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374.

**Skin and body protection** Long sleeved clothing. Wear suitable protective clothing.

**Respiratory protection** No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

**General hygiene considerations** Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work. Wear suitable gloves and eye/face protection.

**Environmental exposure controls** Do not allow into any sewer, on the ground or into any body of water.

## SECTION 9: Physical and chemical properties

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

**Physical state** Liquid  
**Appearance** Liquid  
**Colour** colourless



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Tl, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

Odour  
Odour threshold

Odourless.  
No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Melting point / freezing point	No data available	None known
Initial boiling point and boiling range	No data available	None known
Flammability	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Flash point	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature		None known
pH	No data available	None known
pH (as aqueous solution)	No data available	No information available
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Water solubility	No data available	None known
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Vapour pressure	No data available	None known
Relative density	No data available	None known
Bulk density	No data available	
Liquid Density	No data available	
Relative vapour density	No data available	None known
Particle characteristics		
Particle Size	No information available	
Particle Size Distribution	No information available	

## 9.2. Other information

9.2.1. Information with regards to physical hazard classes  
Not applicable

9.2.2. Other safety characteristics  
No information available

## **SECTION 10: Stability and reactivity**

### 10.1. Reactivity

Reactivity

No information available.



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Tl, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

---

## 10.2. Chemical stability

**Stability** Stable under normal conditions.

### **Explosion data**

**Sensitivity to mechanical impact** None.

**Sensitivity to static discharge** None.

## 10.3. Possibility of hazardous reactions

**Possibility of hazardous reactions** None under normal processing.

## 10.4. Conditions to avoid

**Conditions to avoid** Exposure to air or moisture over prolonged periods.

## 10.5. Incompatible materials

**Incompatible materials** Oxidising agent. Strong acids. Strong bases.

**Hazardous decomposition products** None known based on information supplied.

## **SECTION 11: Toxicological information**

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

#### Information on likely routes of exposure

##### **Product Information**

**Inhalation** Specific test data for the substance or mixture is not available.

**Eye contact** Specific test data for the substance or mixture is not available. Causes serious eye damage. May cause irreversible damage to eyes.

**Skin contact** Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components).

**Ingestion** Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

#### Symptoms related to the physical, chemical and toxicological characteristics

**Symptoms** Redness. Burning. May cause blindness. May cause redness and tearing of the eyes.

---



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Ti, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

## Numerical measures of toxicity

### Acute toxicity

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	5,010.00 mg/kg
ATEmix (dermal)	99,999.00 mg/kg
ATEmix (inhalation-gas)	99,999.00 ppm
ATEmix (inhalation-dust/mist)	50.10 mg/l
ATEmix (inhalation-vapour)	58.90 mg/l

### Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Nitric Acid			= 2500 ppm ( Rat ) 1 h ATE (vapours) = 2.65 mg/L
Zink (stabilized)	= 630 mg/kg ( Rat )		
Nickel	> 9000 mg/kg ( Rat )		> 10.2 mg/L ( Rat ) 1 h
Ferric nitrate nonahydrate	= 3250 mg/kg ( Rat )		
Copper			> 5.11 mg/L ( Rat ) 4 h
Cobalt	= 6171 mg/kg ( Rat )		< 0.05 mg/L ( Rat ) 4 h
Barium nitrate	= 355 mg/kg ( Rat )		> 1.1 mg/L ( Rat ) 243 min
Cadmium	= 1140 mg/kg ( Rat )		= 25 mg/m <sup>3</sup> ( Rat ) 30 min
Silver	> 5000 mg/kg ( Rat )	> 2000 mg/kg ( rat )	> 5.16 mg/L ( Rat ) 4 h

## Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Skin corrosion/irritation** Classification based on data available for ingredients. Causes skin irritation.

**Serious eye damage/eye irritation** Classification based on data available for ingredients. Causes burns. Causes serious eye damage.





# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Tl, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

**Respiratory or skin sensitisation** No information available.

**Germ cell mutagenicity** No information available.

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as mutagenic.

Chemical name	European Union
Cobalt	Muta. 2
Cadmium	Muta. 2

**Carcinogenicity** Contains a known or suspected carcinogen. Classification based on data available for ingredients. May cause cancer.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	European Union
Nickel	Carc. 2
Cobalt	Carc. 1B
Cadmium	Carc. 1B
Beryllium Oxyacetate	Carc. 1B

**Reproductive toxicity** Contains a known or suspected reproductive toxin. Classification based on data available for ingredients. May damage fertility or the unborn child.

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as reproductive toxins.

Chemical name	European Union
Lead	Repr. 1A Lact.
Cobalt	Repr. 1B
Cadmium	Repr. 2

**STOT - single exposure** No information available.

**STOT - repeated exposure** No information available.

**Aspiration hazard** No information available.

## 11.2. Information on other hazards

### 11.2.1. Endocrine disrupting properties



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Ti, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

**Endocrine disrupting properties** No information available.

## 11.2.2. Other information

**Other adverse effects** No information available.

## SECTION 12: Ecological information

### 12.1. Toxicity

**Ecotoxicity** Very toxic to aquatic life with long lasting effects.

**Unknown aquatic toxicity** Contains 0 % of components with unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Zink (stabilized)	EC50: 0.11 - 0.271mg/L (96h, Pseudokirchneriella subcapitata) EC50: 0.09 - 0.125mg/L (72h, Pseudokirchneriella subcapitata)	LC50: 2.16 - 3.05mg/L (96h, Pimephales promelas) LC50: 0.211 - 0.269mg/L (96h, Pimephales promelas) LC50: =2.66mg/L (96h, Pimephales promelas) LC50: =30mg/L (96h, Cyprinus carpio) LC50: =0.45mg/L (96h, Cyprinus carpio) LC50: =7.8mg/L (96h, Cyprinus carpio) LC50: =3.5mg/L (96h, Lepomis macrochirus) LC50: =0.24mg/L (96h, Oncorhynchus mykiss) LC50: =0.59mg/L (96h, Oncorhynchus mykiss) LC50: =0.41mg/L (96h, Oncorhynchus mykiss)	-	EC50: 0.139 - 0.908mg/L (48h, Daphnia magna)
Nickel	EC50: =0.18mg/L (72h, Pseudokirchneriella subcapitata) EC50: 0.174 - 0.311mg/L (96h, Pseudokirchneriella subcapitata)	LC50: >100mg/L (96h, Brachydanio rerio) LC50: =1.3mg/L (96h, Cyprinus carpio) LC50: =10.4mg/L (96h, Cyprinus carpio)	-	EC50: >100mg/L (48h, Daphnia magna) EC50: =1mg/L (48h, Daphnia magna)



## SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Ti, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

Lead	-	LC50: =0.44mg/L (96h, Cyprinus carpio) LC50: =1.17mg/L (96h, Oncorhynchus mykiss) LC50: =1.32mg/L (96h, Oncorhynchus mykiss)	-	EC50: =600µg/L (48h, water flea)
Copper	EC50: 0.031 - 0.054mg/L (96h, Pseudokirchneriella subcapitata) EC50: 0.0426 - 0.0535mg/L (72h, Pseudokirchneriella subcapitata)	LC50: 0.0068 - 0.0156mg/L (96h, Pimephales promelas) LC50: <0.3mg/L (96h, Pimephales promelas) LC50: =0.2mg/L (96h, Pimephales promelas) LC50: =0.052mg/L (96h, Oncorhynchus mykiss) LC50: =1.25mg/L (96h, Lepomis macrochirus) LC50: =0.3mg/L (96h, Cyprinus carpio) LC50: =0.8mg/L (96h, Cyprinus carpio) LC50: =0.112mg/L (96h, Poecilia reticulata)	-	EC50: =0.03mg/L (48h, Daphnia magna)
Cobalt	-	LC50: >100mg/L (96h, Brachydanio rerio)	-	-
Cadmium	-	LC50: =0.003mg/L (96h, Oncorhynchus mykiss) LC50: =0.006mg/L (96h, Oncorhynchus mykiss) LC50: =0.002mg/L (96h, Cyprinus carpio) LC50: =4.26mg/L (96h, Cyprinus carpio) LC50: =0.24mg/L (96h, Cyprinus carpio) LC50: =21.1mg/L (96h, Lepomis macrochirus) LC50: =0.016mg/L (96h, Oryzias latipes) LC50: 0.0004 - 0.003mg/L (96h, Pimephales promelas)	-	EC50: =0.0244mg/L (48h, Daphnia magna)
Silver	-	LC50: 0.00155 - 0.00293mg/L (96h, Pimephales promelas)	-	EC50: =0.00024mg/L (48h, Daphnia magna)



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Tl, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

		LC50: =0.0062mg/L (96h, Oncorhynchus mykiss) LC50: =0.064mg/L (96h, Lepomis macrochirus)		
--	--	---	--	--

## 12.2. Persistence and degradability

**Persistence and degradability** No information available.

## 12.3. Bioaccumulative potential

**Bioaccumulation** There is no data for this product.

### Component Information

Chemical name	Partition coefficient
Nitric Acid	-2.3

## 12.4. Mobility in soil

**Mobility in soil** No information available.

## 12.5. Results of PBT and vPvB assessment

**PBT and vPvB assessment** No information available.

Chemical name	PBT and vPvB assessment
Nitric Acid	The substance is not PBT / vPvB
Zink (stabilized)	The substance is not PBT / vPvB
Nickel	The substance is not PBT / vPvB
Manganese(II) nitrate hexahydrate	The substance is not PBT / vPvB
Lead	PBT assessment does not apply
Ferric nitrate nonahydrate	PBT assessment does not apply
Copper	The substance is not PBT / vPvB
Cobalt	The substance is not PBT / vPvB
Barium nitrate	The substance is not PBT / vPvB
Cadmium	PBT assessment does not apply
Silver	PBT assessment does not apply

## 12.6. Endocrine disrupting properties

**Endocrine disrupting properties** No information available.



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Ti, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

## 12.7. Other adverse effects

No information available.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

**Waste from residues/unused products**

Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging**

Do not reuse empty containers.

## SECTION 14: Transport information

### IATA

14.1 UN number or ID number	UN3264
14.2 UN proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid)
14.3 Transport hazard class(es)	8
14.4 Packing group	III
Description	UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III
14.5 Environmental hazards	Yes
14.6 Special precautions for user	
Special Provisions	A3, A803
ERG Code	8L

### IMDG

14.1 UN number or ID number	UN3264
14.2 UN proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s.(Nitric Acid)
14.3 Transport hazard class(es)	8
14.4 Packing group	III
Description	UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid, Copper), 8, III, Marine pollutant
14.5 Marine pollutant	P
Environmental hazards	Yes
14.6 Special precautions for user	
Special Provisions	223, 274
EmS-No.	F-A, S-B No information available
14.7 Maritime transport in bulk according to IMO instruments	No information available

### RID

14.1 UN number or ID number	UN3264
-----------------------------	--------



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Tl, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

**14.2 UN proper shipping name** Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid)  
**14.3 Transport hazard class(es)** 8  
**14.4 Packing group** III  
**Description** UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III, Environmentally Hazardous  
**14.5 Environmental hazards** Yes  
**14.6 Special precautions for user**  
**Special Provisions** 274  
**Classification code** C1

## ADR

**14.1 UN number or ID number** UN3264  
**14.2 UN proper shipping name** Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid)  
**14.3 Transport hazard class(es)** 8  
**14.4 Packing group** III  
**Description** UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid), 8, III, (E), Environmentally Hazardous  
**14.5 Environmental hazards** Yes  
**14.6 Special precautions for user**  
**Special Provisions** 274  
**Classification code** C1  
**Tunnel restriction code** (E)

## SECTION 15: Regulatory information

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

#### National regulations

##### France

##### Occupational Illnesses (R-463-3, France)

Chemical name	French RG number	Title
Zink (stabilized) 7440-66-6	RG 61	-
Lead 7439-92-1	RG 1	-
Cobalt 7440-48-4	RG 65, RG 70, RG 70bis, RG 70ter	-
Cadmium 7440-43-9	RG 61, RG 61bis	-

**Water hazard class (WGK)** strongly hazardous to water (WGK 3)



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Tl, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

## Netherlands

Chemical name	Netherlands - List of Carcinogens	Netherlands - List of Carcinogens	Netherlands - List of Reproductive Toxins
Manganese(II) nitrate hexahydrate	-	-	Fertility Category 2 Development Category 2
Lead	-	-	Fertility Category 1A Development Category 1A Can be harmful via breastfeeding
Cobalt	Present	-	Fertility Category 1B
Cadmium	Present	-	Fertility Category 1B;including stabilized, pyrophoric Development Category 1B;including stabilized, pyrophoric Can be harmful via breastfeeding including stabilized, pyrophoric
Beryllium Oxyacetate	Present	-	-

## Poland

SDS created according to the following Polish regulation: Act of February 25, 2011 on chemical substances and their mixtures (Journal of Laws of 2018, item 143, as amended). Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing the European Chemicals Agency (EC) as amended. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labeling and packaging of substances and mixtures, as amended. Regulation of the Minister of Health of 10 August 2012 on the criteria and method of classifying chemical substances and their mixtures (Journal of Laws of 2012, item 1018). Regulation of the Minister of Health of 20 April 2012 on labeling packaging of hazardous substances and mixtures and some mixtures (Journal of Laws of 2012, item 445). Regulation of the Minister of Family, Labor and Social Policy of 12 June 2018 on the maximum allowable concentrations and intensities of factors harmful to health in the work environment (Journal of Laws of 2018, item 1286). Announcement of the Minister of Economy, Labor and Social Policy of August 28, 2003 on the publication of the unified text of the Ordinance of the Minister of Labor and Social Policy on general health and safety at work regulations (Journal of Laws of 2003, No. 169, item 1650). Regulation of the Minister of Health of 30 December 2004 on occupational safety and health related to the presence of chemical agents in the workplace (Journal of Laws of 2005, No. 11, item 86). Act of December 14, 2012 on waste (Journal of Laws of 2013, item 21) Regulation of the Minister of Health of



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Tl, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

December 30, 2004 on occupational health and safety related to the presence of chemical agents in the workplace (Journal U. of 2005, No. 11, item 86). Waste Act of December 14, 2012 (Journal of Laws of 2013, item 21). Act of 13 June 2013 on the management of packaging and packaging waste, Journal of Laws 2013, item 888). Government statement of September 24, 2002 - European Agreement on the International Carriage of Dangerous Goods by Road (ADR) (Journal of Laws No. 194, item 1629 and Journal of Laws of 2003, No. 207, item 2013 and 2014).

## European Union

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.

## Authorisations and/or restrictions on use:

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

## DIRECTIVE (EU) 2021/1187 on the marketing and use of explosives precursors

Product contains: Restricted explosives precursors. Making available, introduction, possession and use according to Regulation (EU) 2019/1148, Article 5 (1) and (3)

Chemical name	RESTRICTED EXPLOSIVES PRECURSORS - ANNEX I	REPORTABLE EXPLOSIVES PRECURSORS - ANNEX II
Nitric Acid - 7697-37-2	3 %w/w	-

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
Nitric Acid - 7697-37-2	75.	
Zink (stabilized) - 7440-66-6	75.	
Thallium - 7440-28-0	75.	
Nickel - 7440-02-0	27. 75.	
Lead - 7439-92-1	72. 30. 63. 75.	
Copper - 7440-50-8	75.	
Cobalt - 7440-48-4	30. 28. 75.	
Cadmium - 7440-43-9	72. 23. 28. 75.	
Silver - 7440-22-4	75.	

## Persistent Organic Pollutants





# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Ti, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

Not applicable

## Export Notification requirements

This product contains substances which are regulated pursuant to Regulation (EC) No. 649/2012 of the European parliament and of the council concerning the export and import of dangerous chemicals

Chemical name	European Export/Import Restrictions per (EC) 649/2012 - Annex Number
Lead - 7439-92-1	I.1
Cadmium - 7440-43-9	I.1 I.2

## Dangerous substance category per Seveso Directive (2012/18/EU)

E1 - Hazardous to the Aquatic Environment in Category Acute 1 or Chronic 1

## Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

## Biocidal Products Regulation (EU) No 528/2012 (BPR)

Chemical name	Biocidal Products Regulation (EU) No 528/2012 (BPR)
Copper - 7440-50-8	Product-type 8: Wood preservatives Product-type 21: Antifouling products
Silver - 7440-22-4	Product-type 2: Disinfectants and algicides not intended for direct application to humans or animals Product-type 4: Food and feed area Product-type 5: Drinking water Product-type 9: Fibre, leather, rubber and polymerised materials preservatives Product-type 11: Preservatives for liquid-cooling and processing systems

## EU - Water Framework Directive (2000/60/EC)

Chemical name	EU - Water Framework Directive (2000/60/EC)
Nickel - 7440-02-0	Priority substance
Lead - 7439-92-1	Priority substance
Cadmium - 7440-43-9	Priority hazardous substance

## EU - Environmental Quality Standards (2008/105/EC)

Chemical name	EU - Environmental Quality Standards (2008/105/EC)
Nickel - 7440-02-0	Priority substance
Lead - 7439-92-1	Priority substance
Cadmium - 7440-43-9	Priority hazardous substance

## International Inventories

### TSCA

LGC has not confirmed that the chemical substances in this product are on the TSCA Inventory, and LGC is distributing this product solely for use either in applications statutorily



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Ti, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

**DSL/NDSL**  
**EINECS/ELINCS**  
**ENCS**  
**IECSC**  
**KECI**  
**PICCS**  
**AIIC**

exempt from TSCA and regulated under other laws (e.g., FFDCA, FIFRA) or in research and development activities in accordance with the TSCA Inventory R&D exemption provided at 40 CFR 720.36. It is the end-user's responsibility to understand and follow the requirements that apply to its use of this product.  
Contact supplier for inventory compliance status  
Contact supplier for inventory compliance status  
Contact supplier for inventory compliance status  
Contact supplier for inventory compliance status  
Contact supplier for inventory compliance status  
Contact supplier for inventory compliance status  
Contact supplier for inventory compliance status

## Legend:

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
**ENCS** - Japan Existing and New Chemical Substances  
**IECSC** - China Inventory of Existing Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**AICS** - Australian Inventory of Chemical Substances

## 15.2. Chemical safety assessment

**Chemical Safety Report** A Chemical Safety Assessment is not required for this substance

## **SECTION 16: Other information**

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

#### **Full text of H-Statements referred to under section 3**

EUH071 - Corrosive to the respiratory tract  
H272 - May intensify fire; oxidiser  
H290 - May be corrosive to metals  
H300 - Fatal if swallowed  
H301 - Toxic if swallowed  
H302 - Harmful if swallowed  
H314 - Causes severe skin burns and eye damage  
H315 - Causes skin irritation  
H317 - May cause an allergic skin reaction  
H318 - Causes serious eye damage  
H319 - Causes serious eye irritation  
H330 - Fatal if inhaled



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Ti, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

H331 - Toxic if inhaled  
H332 - Harmful if inhaled  
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled  
H335 - May cause respiratory irritation  
H341 - Suspected of causing genetic defects  
H350 - May cause cancer  
H351 - Suspected of causing cancer  
H360F - May damage fertility  
H360FD - May damage fertility. May damage the unborn child  
H361fd - Suspected of damaging fertility. Suspected of damaging the unborn child  
H362 - May cause harm to breast-fed children  
H372 - Causes damage to organs through prolonged or repeated exposure  
H373 - May cause damage to organs through prolonged or repeated exposure  
H400 - Very toxic to aquatic life  
H410 - Very toxic to aquatic life with long lasting effects  
H411 - Toxic to aquatic life with long lasting effects  
H412 - Harmful to aquatic life with long lasting effects  
H413 - May cause long lasting harmful effects to aquatic life

## Legend

SVHC: Substances of Very High Concern for Authorisation:

## Legend Section 8: Exposure controls/personal protection

TWA TWA (time-weighted average) STEL STEL (Short Term Exposure Limit)  
Ceiling Maximum limit value Sk\* Skin designation

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - Vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	On basis of test data
Serious eye damage/eye irritation	On basis of test data
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 12-Jun-2024

Revision Number 1.01

**VHG-ICL1-100 - CLP Instrument Calibration Standard 1: Ag @ 200; Be @ 400; Cd @ 500; Ba, Co, Cu, Fe, Mn, Ni, Pb, Ti, Zn @ 1000 µg/mL in 5% HNO<sub>3</sub>**

Ozone	Calculation method
Corrosive to metals	On basis of test data

## Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)  
U.S. Environmental Protection Agency ChemView Database  
European Food Safety Authority (EFSA)  
EPA (Environmental Protection Agency)  
Acute Exposure Guideline Level(s) (AEGL(s))  
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
U.S. Environmental Protection Agency High Production Volume Chemicals  
Food Research Journal  
Hazardous Substance Database  
International Uniform Chemical Information Database (IUCLID)  
Japan GHS Classification  
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)  
NIOSH (National Institute for Occupational Safety and Health)  
National Library of Medicine's ChemID Plus (NLM CIP)  
National Library of Medicine's PubMed database (NLM PUBMED)  
National Toxicology Program (NTP)  
New Zealand's Chemical Classification and Information Database (CCID)  
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme  
Organisation for Economic Co-operation and Development Screening Information Data Set  
World Health Organization

Revision date 12-Jun-2024

**This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006**

## Disclaimer

The information in this safety data sheet (SDS) has been prepared with due care and is true and accurate to the best of our knowledge. The user must determine the suitability of the information for its particular purpose, ensure compliance with existing laws and regulations, and be aware that other or additional safety or performance considerations may arise when using, handling and/ or storing the material. The information in this SDS does not purport to be all inclusive or a guarantee as to the properties of the material supplied, and should be used only as a guide. LGC makes no warranties or representations as to the accuracy and completeness of the information contained herein, shall not be held responsible for the suitability of this information for the user's intended purposes or the consequences of such use, and shall not be liable for any damage or loss, howsoever arising, direct or otherwise.

**End of Safety Data Sheet**