

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/21/2022

Reviewed on 10/21/2022

1 Identification

- **Product identifier**
- **Trade name:** CRM-SA-A
- **Article number:** CRM-SA-A
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
High-Purity Standards
 7221 Investment Drive, North Charleston, SC 29418 United States
 Telephone: +1-843-767-7900
 Fax: +1-843-767-7906
 highpuritystandards.com
 Email: info@highpuritystandards.com
- **Information department:** Product safety department
- **Emergency telephone number:**
 INFOTRAC
 Emergency telephone numbers 1-800-535-5053
 Other emergency telephone numbers 1-352-323-3500

2 Hazard(s) identification

- **Classification of the substance or mixture**
 The product is not classified, according to the Globally Harmonized System (GHS).

- **Label elements**
- **GHS label elements** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**

HEALTH	0	Health = 0
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/21/2022

Reviewed on 10/21/2022

Trade name: CRM-SA-A

(Contd. of page 1)

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.
- **Dangerous components:** Void

· Chemical identification of the substance/preparation

	Soil	99.933202%
7440-39-3	barium	0.0314%
7439-96-5	manganese	0.0234%
7429-90-5	aluminium	0.0022%
7440-47-3	chromium	0.0022%
7439-92-1	lead	0.0015%
7440-66-6	zinc	0.0011%
7439-89-6	iron	0.0009%
7803-55-6	Ammonium Vanadate	0.0008%
7757-79-1	potassium nitrate	0.0007%
471-34-1	calcium carbonate	0.0004%
554-13-2	lithium carbonate	0.0004%
497-19-8	sodium carbonate	0.0003%
7440-50-8	copper	0.0003%
12060-58-1	samarium (III) oxide	0.0003%
7440-38-2	arsenic	0.0002%
7439-95-4	magnesium	0.0001%
7440-22-4	silver	0.0001%
7440-32-6	titanium	0.0001%
7440-48-4	cobalt	0.0001%
13106-76-8	ammonium molybdate(VI)	0.0001%

4 First-aid measures

- **Description of first aid measures**
- **General information:** No special measures required.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/21/2022

Reviewed on 10/21/2022

Trade name: CRM-SA-A

(Contd. of page 2)

- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:** Pick up mechanically.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

· PAC-I:

7440-39-3	barium	1.5 mg/m ³
7439-96-5	manganese	3 mg/m ³
7440-47-3	chromium	1.5 mg/m ³
7439-92-1	lead	0.15 mg/m ³
7440-66-6	zinc	6 mg/m ³
7439-89-6	iron	3.2 mg/m ³
7803-55-6	Ammonium Vanadate	0.01 mg/m ³
7757-79-1	potassium nitrate	9 mg/m ³
471-34-1	calcium carbonate	45 mg/m ³
554-13-2	lithium carbonate	3.1 mg/m ³
497-19-8	sodium carbonate	7.6 mg/m ³
7440-50-8	copper	3 mg/m ³
12060-58-1	samarium (III) oxide	15 mg/m ³
7440-38-2	arsenic	1.5 mg/m ³
7439-95-4	magnesium	18 mg/m ³
7440-22-4	silver	0.3 mg/m ³
7440-32-6	titanium	30 mg/m ³
7440-48-4	cobalt	0.18 mg/m ³

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/21/2022

Reviewed on 10/21/2022

Trade name: CRM-SA-A

(Contd. of page 3)

13106-76-8	ammonium molybdate(VI)	3.1 mg/m ³
7440-36-0	antimony	1.5 mg/m ³
7440-31-5	tin	6 mg/m ³
7782-49-2	selenium	0.6 mg/m ³
7440-02-0	nickel	4.5 mg/m ³
7440-43-9	cadmium	0.10 mg/m ³
13494-80-9	tellurium	1.8 mg/m ³

PAC-2:

7440-39-3	barium	180 mg/m ³
7439-96-5	manganese	5 mg/m ³
7440-47-3	chromium	17 mg/m ³
7439-92-1	lead	120 mg/m ³
7440-66-6	zinc	21 mg/m ³
7439-89-6	iron	35 mg/m ³
7803-55-6	Ammonium Vanadate	0.11 mg/m ³
7757-79-1	potassium nitrate	100 mg/m ³
471-34-1	calcium carbonate	210 mg/m ³
554-13-2	lithium carbonate	34 mg/m ³
497-19-8	sodium carbonate	83 mg/m ³
7440-50-8	copper	33 mg/m ³
12060-58-1	samarium (III) oxide	170 mg/m ³
7440-38-2	arsenic	17 mg/m ³
7439-95-4	magnesium	200 mg/m ³
7440-22-4	silver	170 mg/m ³
7440-32-6	titanium	330 mg/m ³
7440-48-4	cobalt	2 mg/m ³
13106-76-8	ammonium molybdate(VI)	22 mg/m ³
7440-36-0	antimony	13 mg/m ³
7440-31-5	tin	67 mg/m ³
7782-49-2	selenium	6.6 mg/m ³
7440-02-0	nickel	50 mg/m ³
7440-43-9	cadmium	0.76 mg/m ³
13494-80-9	tellurium	20 mg/m ³

PAC-3:

7440-39-3	barium	1,100 mg/m ³
7439-96-5	manganese	1,800 mg/m ³
7440-47-3	chromium	99 mg/m ³

(Contd. on page 5)

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/21/2022

Reviewed on 10/21/2022

Trade name: CRM-SA-A

		(Contd. of page 4)
7439-92-1	lead	700 mg/m ³
7440-66-6	zinc	120 mg/m ³
7439-89-6	iron	150 mg/m ³
7803-55-6	Ammonium Vanadate	80 mg/m ³
7757-79-1	potassium nitrate	600 mg/m ³
471-34-1	calcium carbonate	1,300 mg/m ³
554-13-2	lithium carbonate	210 mg/m ³
497-19-8	sodium carbonate	500 mg/m ³
7440-50-8	copper	200 mg/m ³
12060-58-1	samarium (III) oxide	990 mg/m ³
7440-38-2	arsenic	100 mg/m ³
7439-95-4	magnesium	1,200 mg/m ³
7440-22-4	silver	990 mg/m ³
7440-32-6	titanium	2,000 mg/m ³
7440-48-4	cobalt	20 mg/m ³
13106-76-8	ammonium molybdate(VI)	130 mg/m ³
7440-36-0	antimony	80 mg/m ³
7440-31-5	tin	400 mg/m ³
7782-49-2	selenium	40 mg/m ³
7440-02-0	nickel	99 mg/m ³
7440-43-9	cadmium	4.7 mg/m ³
13494-80-9	tellurium	110 mg/m ³

7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special measures required.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/21/2022

Reviewed on 10/21/2022

Trade name: CRM-SA-A

(Contd. of page 5)

- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
- **Breathing equipment:** Not required.
- **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Not required.

9 Physical and chemical properties

- | | |
|--|------------------------------------|
| · Information on basic physical and chemical properties | |
| · General Information | |
| · Appearance: | |
| Form: | Solid |
| Color: | According to product specification |
| · Odor: | Characteristic |
| · Odor threshold: | Not determined. |
| · pH-value: | Not applicable. |
| · Change in condition | |
| Melting point/Melting range: | Undetermined. |
| Boiling point/Boiling range: | 100 °C (212 °F) |
| · Flash point: | Not applicable. |
| · Flammability (solid, gaseous): | Not determined. |
| · Decomposition temperature: | Not determined. |
| · Auto igniting: | Product is not selfigniting. |

(Contd. on page 7)

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/21/2022

Reviewed on 10/21/2022

Trade name: CRM-SA-A

(Contd. of page 6)

· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapor pressure at 20 °C (68 °F):	23 hPa (17.3 mm Hg)
· Density:	Not determined.
· Relative density	Not determined.
· Vapor density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with Water:	Soluble.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
· Solvent content:	
VOC content:	0.00 %
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.

(Contd. on page 8)

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/21/2022

Reviewed on 10/21/2022

Trade name: CRM-SA-A

(Contd. of page 7)

· **Additional toxicological information:**

The product is not subject to classification according to internally approved calculation methods for preparations:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

7440-47-3	chromium	3
7439-92-1	lead	2B
7440-38-2	arsenic	1
7440-48-4	cobalt	2B
7782-49-2	selenium	3
7440-02-0	nickel	2B
19049-40-2	Beryllium acetate, basic	1
7440-43-9	cadmium	1

· **NTP (National Toxicology Program)**

7439-92-1	lead	R
7440-38-2	arsenic	K
7440-48-4	cobalt	R
7440-02-0	nickel	R
19049-40-2	Beryllium acetate, basic	K
7440-43-9	cadmium	K

· **OSHA-Ca (Occupational Safety & Health Administration)**

7440-38-2	arsenic
7440-43-9	cadmium

12 Ecological information

· **Toxicity**

· **Aquatic toxicity:** No further relevant information available.

· **Persistence and degradability** No further relevant information available.

· **Behavior in environmental systems:**

· **Bioaccumulative potential** No further relevant information available.

· **Mobility in soil** No further relevant information available.

· **Additional ecological information:**

· **General notes:**

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

(Contd. on page 9)

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/21/2022

Reviewed on 10/21/2022

Trade name: CRM-SA-A

(Contd. of page 8)

· **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:** Smaller quantities can be disposed of with household waste.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

- | | |
|--|-----------------|
| · UN-Number | |
| · DOT, ADR, IMDG, IATA | not regulated |
| · UN proper shipping name | |
| · DOT, ADR, IMDG, IATA | not regulated |
| · Transport hazard class(es) | |
| · DOT, ADR, ADN, IMDG, IATA | |
| · Class | not regulated |
| · Packing group | |
| · DOT, ADR, IMDG, IATA | not regulated |
| · Environmental hazards: | Not applicable. |
| · Special precautions for user | Not applicable. |
| · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |
| · UN "Model Regulation": | not regulated |

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.
- **Sara**

· **Section 355 (extremely hazardous substances):**

13494-80-9 tellurium

· **Section 313 (Specific toxic chemical listings):**

7440-39-3 barium

7439-96-5 manganese

(Contd. on page 10)

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/21/2022

Reviewed on 10/21/2022

Trade name: CRM-SA-A

(Contd. of page 9)

7429-90-5	aluminium
7440-47-3	chromium
7439-92-1	lead
7440-66-6	zinc
7803-55-6	Ammonium Vanadate
7757-79-1	potassium nitrate
554-13-2	lithium carbonate
7440-50-8	copper
7440-38-2	arsenic
7440-22-4	silver
7440-48-4	cobalt
7440-36-0	antimony
7782-49-2	selenium
7440-02-0	nickel
19049-40-2	Beryllium acetate, basic
7440-43-9	cadmium

TSCA (Toxic Substances Control Act):

7440-39-3	barium	ACTIVE
7439-96-5	manganese	ACTIVE
7429-90-5	aluminium	ACTIVE
7440-47-3	chromium	ACTIVE
7439-92-1	lead	ACTIVE
7440-66-6	zinc	ACTIVE
7439-89-6	iron	ACTIVE
7803-55-6	Ammonium Vanadate	ACTIVE
7757-79-1	potassium nitrate	ACTIVE
471-34-1	calcium carbonate	ACTIVE
554-13-2	lithium carbonate	ACTIVE
497-19-8	sodium carbonate	ACTIVE
7440-50-8	copper	ACTIVE
12060-58-1	samarium (III) oxide	ACTIVE
7440-38-2	arsenic	ACTIVE
7439-95-4	magnesium	ACTIVE
7440-22-4	silver	ACTIVE
7440-32-6	titanium	ACTIVE
7440-48-4	cobalt	ACTIVE
13106-76-8	ammonium molybdate(VI)	ACTIVE

(Contd. on page 11)

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/21/2022

Reviewed on 10/21/2022

Trade name: CRM-SA-A

(Contd. of page 10)

7440-36-0	antimony	ACTIVE
7440-31-5	tin	ACTIVE
7782-49-2	selenium	ACTIVE
7440-02-0	nickel	ACTIVE
7440-43-9	cadmium	ACTIVE
13494-80-9	tellurium	ACTIVE

· **Hazardous Air Pollutants**

7439-96-5	manganese
7439-92-1	lead
7440-48-4	cobalt

· **Proposition 65**

· **Chemicals known to cause cancer:**

7439-92-1	lead
7440-38-2	arsenic
7440-48-4	cobalt
7440-02-0	nickel
19049-40-2	Beryllium acetate, basic
7440-43-9	cadmium

· **Chemicals known to cause reproductive toxicity for females:**

7439-92-1	lead
-----------	------

· **Chemicals known to cause reproductive toxicity for males:**

7439-92-1	lead
7440-43-9	cadmium

· **Chemicals known to cause developmental toxicity:**

7439-92-1	lead
554-13-2	lithium carbonate
7440-43-9	cadmium

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

7440-39-3	barium	D, CBD(inh), NL(oral)
7439-96-5	manganese	D
7440-47-3	chromium	D
7439-92-1	lead	B2
7440-66-6	zinc	D, I, II
7440-50-8	copper	D
7440-38-2	arsenic	A
7440-22-4	silver	D

(Contd. on page 12)

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/21/2022

Reviewed on 10/21/2022

Trade name: CRM-SA-A

(Contd. of page 11)

7782-49-2	selenium	D
7440-43-9	cadmium	BI

· TLV (Threshold Limit Value)

7440-39-3	barium	A4
7429-90-5	aluminium	A4
7440-47-3	chromium	A4
7439-92-1	lead	A3
7440-38-2	arsenic	A1
7440-48-4	cobalt	A3
13106-76-8	ammonium molybdate(VI)	A3
7440-02-0	nickel	A5
7440-43-9	cadmium	A2

· NIOSH-Ca (National Institute for Occupational Safety and Health)

7440-38-2	arsenic
7440-02-0	nickel
19049-40-2	Beryllium acetate, basic
7440-43-9	cadmium

· GHS label elements Void

· Hazard pictograms Void

· Signal word Void

· Hazard statements Void

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Department issuing SDS: Environment protection department.

· Contact:

High-Purity Standards

Tel: 843-767-7900

Fax: 843-767-7906

· Date of preparation / last revision 10/21/2022

· Abbreviations and acronyms:

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

(Contd. on page 13)



Safety Data Sheet
acc. to OSHA HCS

Printing date 10/21/2022

Reviewed on 10/21/2022

Trade name: CRM-SA-A

(Contd. of page 12)

VOC: Volatile Organic Compounds (USA, EU)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit

US