

# Safety Data Sheet

acc. to OSHA HCS

Revision date 08/23/2024

## 1 Identification

- **Product identifier**
- **Product Name:** Hexavalent Chromium Standard
- **Part number:** ICP-024A, ICP-024A-25, ICP-024A-L
- **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Agilent Technologies, Inc.  
5301 Stevens Creek Blvd.  
Santa Clara, CA 95051 USA
- **Information department:**  
Telephone: 800-227-9770  
e-mail: pdl-msds\_author@agilent.com
- **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS08 Health hazard

Sensitization - Respiratory 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
 Germ Cell Mutagenicity 1B H340 May cause genetic defects.  
 Carcinogenicity 1A H350 May cause cancer.  
 Toxic to Reproduction 1B H360 May damage fertility or the unborn child.



GHS07

Sensitization - Skin 1 H317 May cause an allergic skin reaction.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS08

- **Signal word** Danger
- **Hazard-determining components of labeling:**  
ammonium dichromate
- **Hazard statements**  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H317 May cause an allergic skin reaction.  
H340 May cause genetic defects.  
H350 May cause cancer.  
H360 May damage fertility or the unborn child.

(Contd. on page 2)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 08/23/2024

Revision date 08/23/2024

**Product Name: Hexavalent Chromium Standard**

(Contd. of page 1)

## · Precautionary statements

- P284 [In case of inadequate ventilation] wear respiratory protection.
- P261 Avoid breathing dust/fume/gas/mist/vapors/spray
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P272 Contaminated work clothing must not be allowed out of the workplace.
- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P321 Specific treatment (see on this label).
- P342+P311 If experiencing respiratory symptoms: Call a poison center/doctor.
- P363 Wash contaminated clothing before reuse.
- P304+P341 If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.
- P308+P313 IF exposed or concerned: Get medical advice/attention.
- P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
- P302+P352 If on skin: Wash with plenty of water.
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

## · Classification system:

## · NFPA ratings (scale 0 - 4)



## · HMIS-ratings (scale 0 - 4)



## · Other hazards

## · Results of PBT and vPvB assessment

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

## 3 Composition/information on ingredients

### · Chemical characterization: Mixtures

· **Description:** Mixture of the substances listed below with nonhazardous additions.

### · Dangerous components:

7789-09-5	ammonium dichromate	0.24%
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## 4 First-aid measures

### · Description of first aid measures

#### · After inhalation:

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

· **After eye contact:** Rinse opened eye for several minutes under running water.

· **After swallowing:** If symptoms persist consult doctor.

(Contd. on page 3)

**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 08/23/2024

Revision date 08/23/2024

**Product Name: Hexavalent Chromium Standard**

(Contd. of page 2)

- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **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:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to section 13.  
Ensure adequate ventilation.
- **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-1:**

7789-09-5	ammonium dichromate	0.37 mg/m <sup>3</sup>
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· **PAC-2:**

7789-09-5	ammonium dichromate	1.5 mg/m <sup>3</sup>
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· **PAC-3:**

7789-09-5	ammonium dichromate	8.8 mg/m <sup>3</sup>
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**7 Handling and storage**

- **Handling:**
- **Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle receptacle with care.  
Prevent formation of aerosols.
- **Information about protection against explosions and fires:** Keep respiratory protective device available.
- **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:** Keep receptacle tightly sealed.

(Contd. on page 4)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 08/23/2024

Revision date 08/23/2024

**Product Name: Hexavalent Chromium Standard**

· **Specific end use(s)** No further relevant information available.

(Contd. of page 3)

## 8 Exposure controls/personal protection

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

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**
**7789-09-5 ammonium dichromate**

PEL	Long-term value: 0.005* mg/m <sup>3</sup> Ceiling limit value: 0.1** mg/m <sup>3</sup> *as Cr(VI) **as CrO <sub>3</sub> ; see 29 CFR 1910.1026
REL	Long-term value: 0.0002 mg/m <sup>3</sup> as Cr; See Pocket Guide Apps. A and C
TLV	Short-term value: 0.0005 mg/m <sup>3</sup> Long-term value: 0.0002 mg/m <sup>3</sup> as Cr(VI); A1; inhalable, Skin; BEI, DSEN, RSEN

· **Ingredients with biological limit values:**
**7789-09-5 ammonium dichromate**

BEI	25 µg/L Medium: urine Time: end of shift at end of workweek Parameter: Total chromium (fume)
	10 µg/L Medium: urine Time: increase during shift Parameter: Total chromium (fume)

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.  
Store protective clothing separately.

· **Breathing equipment:**

When used as intended with Agilent instruments, the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not needed.

Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved device/equipment with appropriate organic or acid gas cartridge.

· **Protection of hands:**

Although not recommended for constant contact with the chemicals or for clean-up, nitrile gloves 11-13 mil thickness are recommended for normal use. The breakthrough time is 1 hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15 mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.

(Contd. on page 5)

# Safety Data Sheet acc. to OSHA HCS

Printing date 08/23/2024

Revision date 08/23/2024

**Product Name: Hexavalent Chromium Standard**

(Contd. of page 4)

- **Material of gloves**  
For normal use: nitrile rubber, 11-13 mil thickness  
For direct contact with the chemical: butyl rubber, 12-15 mil thickness
- **Penetration time of glove material**  
For normal use: nitrile rubber: 1 hour  
For direct contact with the chemical: butyl rubber: >4 hours
- **Eye protection:**



Tightly sealed goggles

## 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**
  - Form:** Fluid
  - Color:** Colorless
- **Odor:** Odorless
- **Odor threshold:** Not determined.
- **pH-value:** Not determined.
- **Change in condition**
  - Melting point/Melting range:** 0 °C (32 °F)
  - Boiling point/Boiling range:** 100 °C (212 °F)
- **Flash point:** Not applicable.
- **Flammability (solid, gaseous):** Not applicable.
- **Decomposition temperature:** Not determined.
- **Ignition temperature:** Product is not selfigniting.
- **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 at 20 °C (68 °F):** 1.00276 g/cm<sup>3</sup> (8.36803 lbs/gal)
- **Relative density** Not determined.
- **Vapor density** Not determined.
- **Evaporation rate** Not determined.
- **Solubility in / Miscibility with Water:** Not miscible or difficult to mix.
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
  - Dynamic:** Not determined.

(Contd. on page 6)

# Safety Data Sheet acc. to OSHA HCS

Printing date 08/23/2024

Revision date 08/23/2024

**Product Name: Hexavalent Chromium Standard**

(Contd. of page 5)

<b>Kinematic:</b>	Not determined.
· <b>Solvent content:</b>	
<b>Water:</b>	99.8 %
<b>VOC content:</b>	0.00 %
	0.0 g/l / 0.00 lb/gal
<b>Solids content:</b>	0.2 %
· <b>Other information</b>	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:**

· **LD/LC50 values that are relevant for classification:**
**ATE (Acute Toxicity Estimate)**

Oral	LD50	22,083 mg/kg (rat)
Inhalative	LC50/4 h	20.8 mg/L

**7789-09-5 ammonium dichromate**

Oral	LD50	53 mg/kg (rat)
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- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:**
- Sensitization possible through inhalation.
- Sensitization possible through skin contact.
- **Additional toxicological information:**
- The product shows the following dangers according to internally approved calculation methods for preparations:
- Harmful
- Irritant
- The product can cause inheritable damage.

- **Carcinogenic categories**

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

7789-09-5	ammonium dichromate	1
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· **NTP (National Toxicology Program)**

7789-09-5	ammonium dichromate	K
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(Contd. on page 7)

**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 08/23/2024

Revision date 08/23/2024

**Product Name: Hexavalent Chromium Standard**

(Contd. of page 6)

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

None of the ingredients is listed.

**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 3 (Self-assessment): extremely hazardous for water  
Do not allow product to reach ground water, water course or sewage system, even in small quantities.  
Danger to drinking water if even extremely small quantities leak into the ground.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

**13 Disposal considerations**

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

**14 Transport information**

- |                                       |                 |
|---------------------------------------|-----------------|
| · <b>UN-Number</b>                    |                 |
| · <b>DOT, ADN, IMDG, IATA</b>         | not regulated   |
| · <b>UN proper shipping name</b>      |                 |
| · <b>DOT, ADN, IMDG, IATA</b>         | not regulated   |
| · <b>Transport hazard class(es)</b>   |                 |
| · <b>DOT, ADN, IMDG, IATA</b>         |                 |
| · <b>Class</b>                        | not regulated   |
| · <b>Packing group</b>                |                 |
| · <b>DOT, IMDG, IATA</b>              | not regulated   |
| · <b>Environmental hazards:</b>       | Not applicable. |
| · <b>Special precautions for user</b> | Not applicable. |

(Contd. on page 8)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 08/23/2024

Revision date 08/23/2024

**Product Name: Hexavalent Chromium Standard**

(Contd. of page 7)

- **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
- Sara

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

None of the ingredients is listed.

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

7789-09-5 ammonium dichromate

### · TSCA (Toxic Substances Control Act):

All components have the value ACTIVE.

### · Hazardous Air Pollutants

7789-09-5 ammonium dichromate

### · Proposition 65

#### · Chemicals known to cause cancer:

7789-09-5 ammonium dichromate

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

7789-09-5 ammonium dichromate

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

7789-09-5 ammonium dichromate

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

7789-09-5 ammonium dichromate

### · Carcinogenic categories

#### · EPA (Environmental Protection Agency)

7789-09-5 ammonium dichromate A(inh), D(oral), K/L(inh), CBD(oral)

#### · TLV (Threshold Limit Value)

7789-09-5 ammonium dichromate A1

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

7789-09-5 ammonium dichromate

### · National regulations:

#### · Additional classification according to Decree on Hazardous Materials:

Carcinogenic hazardous material group III (dangerous).

#### · Information about limitation of use:

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation.

Exceptions can be made by the authorities in certain cases.

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

(Contd. on page 9)



## Safety Data Sheet

acc. to OSHA HCS

Printing date 08/23/2024

Revision date 08/23/2024

**Product Name: Hexavalent Chromium Standard**

(Contd. of page 8)

### 16 Other information

The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

· **Department issuing SDS:** Document Control / Regulatory

· **Contact:** pdl-acg-regulatory-cq@agilent.com

· **Date of preparation / last revision** 08/23/2024 / 5

· **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)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

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

BEI: Biological Exposure Limit

Sensitization - Respiratory 1: Respiratory sensitisation – Category 1

Sensitization - Skin 1: Skin sensitisation – Category 1

Germ Cell Mutagenicity 1B: Germ cell mutagenicity – Category 1B

Carcinogenicity 1A: Carcinogenicity – Category 1A

Toxic to Reproduction 1B: Reproductive toxicity – Category 1B

· **\* Data compared to the previous version altered.**

US