



MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 07/22/2013

Version 1.1

SECTION 1. Identification

Product identifier

Catalog No. 114552

Product name Chromate Cell Test (chromium VI and total chromium) Method:
photometric 0.05 - 2.00 mg/l Cr
0.11 - 4.46 mg/l CrO₄ Spectroquant®

Cr

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

Identified uses Reagent for analysis

Details of the supplier of the safety data sheet

Company EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821,
United States of America | SDS Phone Support: +1-978-715-1335 |
General Inquiries: +1-978-715-4321 | Monday to Friday, 9:00 AM to
4:00 PM Eastern Time (GMT-5)

Emergency telephone 800-424-9300 CHEMTREC (USA)
+1-703-527-3887 CHEMTREC (International)
24 Hours/day; 7 Days/week

SECTION 2. Hazards identification

GHS-Labeling

Not a dangerous substance according to GHS.

OSHA Hazards

While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Chemical nature Mixture of organic compounds

Remarks No hazardous ingredients according to the OSHA Hazard
Communication Standard 29CFR 19101200.

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr	

SECTION 4. First aid measures

Description of first-aid measures

Inhalation

After inhalation: fresh air.

Skin contact

After skin contact: wash off with plenty of water. Remove contaminated clothing.

Eye contact

After eye contact: rinse out with plenty of water.

Ingestion

After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

Most important symptoms and effects, both acute and delayed

Diarrhea, Nausea, Vomiting

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Water, Carbon dioxide (CO₂), Foam, Dry powder

Unsuitable extinguishing media

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

Special hazards arising from the substance or mixture

Combustible material, Development of hazardous combustion gases or vapors possible in the event of fire.

Fire may cause evolution of:

nitrous gases, nitrogen oxides

Advice for firefighters

Special protective equipment for fire-fighters

In the event of fire, wear self-contained breathing apparatus.

Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Evacuate the danger area, observe emergency procedures, consult an expert.

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version 1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr	

Advice for emergency responders: Protective equipment see section 8.

Environmental precautions

Do not empty into drains.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

SECTION 7. Handling and storage

Precautions for safe handling

Observe label precautions.

Conditions for safe storage, including any incompatibilities

Tightly closed. Away from combustible materials and sources of ignition and heat.

Store at +15°C to +25°C (+59°F to +77°F).

The data applies to the entire pack.

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Contains no substances with occupational exposure limit values.

Engineering measures

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Change contaminated clothing. Wash hands after working with substance.

Eye/face protection

Safety glasses

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Respiratory protection

required when dusts are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr	

SECTION 9. Physical and chemical properties

Physical state	solid
Color	pink
Odor	odorless
Odor Threshold	No information available.
pH	ca. 7 at 10 g/l 68 °F (20 °C)
Melting point	No information available.
Boiling point	No information available.
Flash point	No information available.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapor pressure	No information available.
Relative vapor density	No information available.
Relative density	No information available.
Water solubility	at 68 °F (20 °C) soluble
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Bulk density	ca.400 - 500 kg/m ³

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version 1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr	

SECTION 10. Stability and reactivity

Reactivity

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

Chemical stability

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

Possibility of hazardous reactions

Violent reactions possible with:

Strong oxidizing agents, Strong acids, strong alkalis

Conditions to avoid

no information available

Incompatible materials

no information available

Hazardous decomposition products

in the event of fire: See section 5.

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Eye contact, Skin contact, Ingestion

Acute oral toxicity

Symptoms: After uptake of large quantities: Nausea, Vomiting, Diarrhea

Specific target organ systemic toxicity - single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ systemic toxicity - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard

Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr	

	carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information

Quantitative data on the toxicity of this product are not available.
Further data:
Further hazardous properties cannot be excluded but unlikely when the product is handled appropriately.
Handle in accordance with good industrial hygiene and safety practice.

Ingredients

SECTION 12. Ecological information

Ecotoxicity

No information available.

Persistence and degradability

No information available.

Bioaccumulative potential

No information available.

Mobility in soil

No information available.

Other adverse effects

Additional ecological information
Discharge into the environment must be avoided.

Ingredients

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr	

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)

UN number	UN3316
Proper shipping name	CHEMICAL KIT
Class	9
Packing group	II
Environmentally hazardous	--

Air transport (IATA)

UN number	UN 3316
Proper shipping name	CHEMICAL KIT
Class	9
Packing group	II
Environmentally hazardous	--
Special precautions for user	no

Sea transport (IMDG)

UN number	UN 3316
Proper shipping name	CHEMICAL KIT
Class	9
Packing group	II
Environmentally hazardous	--
Special precautions for user	yes
EmS	F-A S-P

THIS TRANSPORT DATA APPLIES TO THE ENTIRE PACK!

SECTION 15. Regulatory information

United States of America

OSHA Hazards
No OSHA Hazards

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version 1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr	

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

SARA 311/312 Hazards

No SARA Hazards

SARA 313

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 302

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

DEA List I

Not listed

DEA List II

Not listed

US State Regulations

Massachusetts Right To Know

Remarks

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know

Ingredients

D-mannitol

1,5-diphenylcarbazine

New Jersey Right To Know

Ingredients

D-mannitol

1,5-diphenylcarbazine

polymer of 1-vinyl-2-pyrrolidone

California Prop 65 Components

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version 1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr	

Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL.

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

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

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

Revision Date 07/22/2013

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

All rights reserved. Millipore and the "M" Mark are registered trademarks of Merck KGaA, Darmstadt, Germany.



MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 07/22/2013

Version 1.1

SECTION 1. Identification

Product identifier

Catalog No. 114552

Product name Chromate Cell Test (chromium VI and total chromium) Method:
photometric 0.05 - 2.00 mg/l Cr
0.11 - 4.46 mg/l CrO₄ Spectroquant®

Cr-1K

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

Identified uses Reagent for analysis

Details of the supplier of the safety data sheet

Company EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821,
United States of America | SDS Phone Support: +1-978-715-1335 |
General Inquiries: +1-978-715-4321 | Monday to Friday, 9:00 AM to
4:00 PM Eastern Time (GMT-5)

Emergency telephone 800-424-9300 CHEMTREC (USA)
+1-703-527-3887 CHEMTREC (International)
24 Hours/day; 7 Days/week

SECTION 2. Hazards identification

GHS Classification

Corrosive to Metals, Category 1, H290
Skin corrosion, Category 1A, H314

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

GHS-Labeling

Hazard pictograms



Signal Word
Danger

Hazard Statements

H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr-1K	

Precautionary Statements

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P309 + P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

OSHA Hazards

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Chemical nature Aqueous solution

Hazardous ingredients

Chemical Name (Concentration)

CAS-No.

sulphuric acid (>= 10 % - < 30 %)

7664-93-9

SECTION 4. First aid measures

Description of first-aid measures

General advice

First aider needs to protect himself.

Inhalation

After inhalation: fresh air. Call in physician.

Skin contact

After skin contact: wash off with plenty of water. Immediately remove contaminated clothing. If available swab with polyethylene glycol 400. Call a physician immediately.

Eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

Ingestion

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation!). Call a physician immediately. Do not attempt to neutralize.

Most important symptoms and effects, both acute and delayed

Irritation and corrosion, Cough, Shortness of breath

Risk of blindness!

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version 1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr-1K	

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media

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

Special hazards arising from the substance or mixture

Not combustible.

Ambient fire may liberate hazardous vapors.

Fire may cause evolution of:

Sulfur oxides

Advice for firefighters

Special protective equipment for fire-fighters

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

Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

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

Advice for emergency responders: Protective equipment see section 8.

Environmental precautions

Do not empty into drains.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

Take up with liquid-absorbent and neutralizing material (e.g. Chemizorb® H⁺, Merck Art. No. 101595). Dispose of properly. Clean up affected area.

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number 114552 Version 1.1
Product name Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr
0.11 - 4.46 mg/l CrO₄ Spectroquant®
Cr-1K

SECTION 7. Handling and storage

Precautions for safe handling

Observe label precautions.

Observe label precautions.

Conditions for safe storage, including any incompatibilities

Tightly closed. Away from combustible materials and sources of ignition and heat.

Store at +15°C to +25°C (+59°F to +77°F).

The data applies to the entire pack.

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

Basis	Value	Threshold limits	Remarks
<i>sulphuric acid (7664-93-9)</i>			
ACGIH	Time Weighted Average (TWA):	0.2 mg/m ³	Form of exposure: Thoracic fraction.
NIOSH/GUIDE	Recommended exposure limit (REL):	1 mg/m ³	
OSHA_TRANS	PEL:	1 mg/m ³	
Z1A	Time Weighted Average (TWA):	1 mg/m ³	

Engineering measures

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Change contaminated clothing and immerse in water. Preventive skin protection Wash hands and face after working with substance.

Eye/face protection

Tightly fitting safety goggles

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Other protective equipment:

Acid-resistant protective clothing.

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version 1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr-1K	

Respiratory protection

required when vapors/aerosols are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	odorless
Odor Threshold	not applicable
pH	ca. 1 at 68 °F (20 °C)
Melting point	No information available.
Boiling point	No information available.
Flash point	not applicable
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Vapor pressure	No information available.
Relative vapor density	No information available.
Relative density	1.18 g/cm ³ at 68 °F (20 °C)
Water solubility	at 68 °F (20 °C) soluble, (development of heat)
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version 1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr-1K	

Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Ignition temperature	not applicable
Corrosion	May be corrosive to metals.

SECTION 10. Stability and reactivity

Reactivity

has a corrosive effect

Chemical stability

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

Possibility of hazardous reactions

A risk of explosion and/or of toxic gas formation exists with the following substances:

Violent reactions possible with:

oxyhalogenic compounds, permanganates, nitrates, carbides, combustible substances, organic solvent, acetylidene, Nitriles, nitrides, organic nitro compounds, anilines, Peroxides, picrates, lithium silicide, Water, Alkali metals, alkali compounds, Ammonia, Alkaline earth metals, alkalines, alkaline earth compounds, Metals, metal alloys, Oxides of phosphorus, phosphorus, hydrides, halogen-halogen compounds, acids

Conditions to avoid

no information available

Incompatible materials

animal/vegetable tissues, Metals
Gives off hydrogen by reaction with metals.

Hazardous decomposition products

in the event of fire: See section 5.

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Eye contact, Skin contact

Target Organs

Eyes

Skin

Respiratory system

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version 1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr-1K	

teeth

Mucous membranes

Skin irritation

Mixture causes severe burns.

Eye irritation

Mixture causes serious eye damage.

Risk of blindness!

Specific target organ systemic toxicity - single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ systemic toxicity - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard

Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC	Group 1: Carcinogenic to humans sulphuric acid 7664-93-9
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	Known carcinogen. sulphuric acid 7664-93-9
ACGIH	A2: Suspected human carcinogen sulphuric acid 7664-93-9

Further information

After inhalation of aerosols: damage to the affected mucous membranes. After skin contact: severe burns with formation of scabs. After eye contact: burns, corneal lesions. After swallowing: severe pain (risk of perforation!), nausea, vomiting and diarrhea. After a latency period of several weeks possibly pyloric stenosis.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

Ingredients

sulphuric acid

Acute inhalation toxicity
LC50 rat: 0.25 mg/l; 4 h (IUCLID)

Germ cell mutagenicity

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version 1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr-1K	

Genotoxicity in vitro
Ames test
Salmonella typhimurium
Result: negative
(HSDB)

SECTION 12. Ecological information

Ecotoxicity

No information available.

Persistence and degradability

No information available.

Bioaccumulative potential

No information available.

Mobility in soil

No information available.

Other adverse effects

Additional ecological information

Biological effects:

Harmful effect due to pH shift.

Caustic even in diluted form.

Does not cause biological oxygen deficit.

Endangers drinking-water supplies if allowed to enter soil and/or waters in large quantities.

Neutralization possible in waste water treatment plants.

Further information on ecology

Discharge into the environment must be avoided.

Ingredients

sulphuric acid

Toxicity to daphnia and other aquatic invertebrates

EC50 Daphnia magna (Water flea): 29 mg/l; 24 h (IUCLID)

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

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number 114552 Version1.1
Product name Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr
0.11 - 4.46 mg/l CrO₄ Spectroquant®
Cr-1K

UN number UN3316
Proper shipping name CHEMICAL KIT
Class 9
Packing group II
Environmentally hazardous --

Air transport (IATA)

UN number UN 3316
Proper shipping name CHEMICAL KIT
Class 9
Packing group II
Environmentally hazardous --
Special precautions for user no

Sea transport (IMDG)

UN number UN 3316
Proper shipping name CHEMICAL KIT
Class 9
Packing group II
Environmentally hazardous --
Special precautions for user yes
EmS F-A S-P

THIS TRANSPORT DATA APPLIES TO THE ENTIRE PACK!

SECTION 15. Regulatory information

United States of America

OSHA Hazards

Target organ effects
Corrosive to skin
Corrosive to eyes
Corrosive by inhalation.
Carcinogen

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

SARA 311/312 Hazards

Acute Health Hazard
Chronic Health Hazard

SARA 313

The following components are subject to reporting levels established by SARA Title III, Section 313:

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number 114552 Version 1.1
Product name Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 -
2.00 mg/l Cr
0.11 - 4.46 mg/l CrO₄ Spectroquant®
Cr-1K

Ingredients

sulphuric acid 7664-93-9

SARA 302

The following components are subject to reporting levels established by SARA Title III, Section 302:

Ingredients

sulphuric acid 7664-93-9

Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Ingredients

sulphuric acid

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Ingredients

sulphuric acid

DEA List I

Not listed

DEA List II

Listed

Ingredients

sulphuric acid 7664-93-9

US State Regulations

Massachusetts Right To Know

Ingredients

sulphuric acid

Pennsylvania Right To Know

Ingredients

water

sulphuric acid

New Jersey Right To Know

Ingredients

water

sulphuric acid

California Prop 65 Components

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version 1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr-1K	

Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL.

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

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

H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.

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

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

Revision Date 07/22/2013

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

All rights reserved. Millipore and the "M" Mark are registered trademarks of Merck KGaA, Darmstadt, Germany.



MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 07/22/2013

Version 1.1

SECTION 1. Identification

Product identifier

Catalog No. 114552

Product name Chromate Cell Test (chromium VI and total chromium) Method:
photometric 0.05 - 2.00 mg/l Cr
0.11 - 4.46 mg/l CrO₄ Spectroquant®

Cr-2K

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

Identified uses Reagent for analysis

Details of the supplier of the safety data sheet

Company EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821,
United States of America | SDS Phone Support: +1-978-715-1335 |
General Inquiries: +1-978-715-4321 | Monday to Friday, 9:00 AM to
4:00 PM Eastern Time (GMT-5)

Emergency telephone 800-424-9300 CHEMTREC (USA)
+1-703-527-3887 CHEMTREC (International)
24 Hours/day; 7 Days/week

SECTION 2. Hazards identification

GHS Classification

Oxidizing solid, Category 3, H272
Acute toxicity, Category 4, Oral, H302
Skin irritation, Category 2, H315
Eye irritation, Category 2, H319
Respiratory sensitization, Category 1, H334
Skin sensitization, Category 1, H317
Specific target organ systemic toxicity - single exposure, Category 3, H335
For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Hazard pictograms



Signal Word

Danger

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr-2K	

Hazard Statements

H272 May intensify fire; oxidizer.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335 May cause respiratory irritation.

Precautionary Statements

P280 Wear protective gloves.

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

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P304 + P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

OSHA Hazards

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Chemical nature Mixture of inorganic compounds

Hazardous ingredients

Chemical Name (Concentration)

CAS-No.

sodium nitrate (>= 70 % - < 90 %)

7631-99-4

Potassium persulfate (>= 30 % - < 50 %)

7727-21-1

SECTION 4. First aid measures

Description of first-aid measures

General advice

First aider needs to protect himself.

Inhalation

After inhalation: fresh air. Consult a physician.

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version 1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr-2K	

Skin contact

After skin contact: wash off with plenty of water. Remove contaminated clothing. Consult a physician.

Eye contact

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

Ingestion

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

Most important symptoms and effects, both acute and delayed

irritant effects, Allergic reactions, Diarrhea, Nausea, Vomiting

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media

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

Special hazards arising from the substance or mixture

Not combustible.

Has a fire-promoting effect due to release of oxygen.

Ambient fire may liberate hazardous vapors.

Fire may cause evolution of:

nitrous gases, nitrogen oxides, Sulfur oxides

Advice for firefighters

Special protective equipment for fire-fighters

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

Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid substance contact. Avoid inhalation of dusts. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number 114552 Version 1.1
Product name Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 -
2.00 mg/l Cr
0.11 - 4.46 mg/l CrO₄ Spectroquant®
Cr-2K

Advice for emergency responders: Protective equipment see section 8.

Environmental precautions

Do not empty into drains.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

SECTION 7. Handling and storage

Precautions for safe handling

Work under hood. Do not inhale substance/mixture.

Observe label precautions.

Conditions for safe storage, including any incompatibilities

Tightly closed. Away from combustible materials and sources of ignition and heat.

Store at +15°C to +25°C (+59°F to +77°F).

The data applies to the entire pack.

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

Basis	Value	Threshold limits	Remarks
<i>Potassium persulfate (7727-21-1)</i>			
ACGIH	Time Weighted Average (TWA):	0.1 mg/m ³	Expressed as: as persulfate

Engineering measures

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

Eye/face protection

Safety glasses

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version 1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr-2K	

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Other protective equipment:

protective clothing

Respiratory protection

required when dusts are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

SECTION 9. Physical and chemical properties

Physical state	solid
Color	colorless
Odor	odorless
Odor Threshold	not applicable
pH	ca. 5.0 - 5.5 at 50 g/l 68 °F (20 °C)
Melting point	No information available.
Boiling point	No information available.
Flash point	not applicable
Evaporation rate	No information available.
Flammability (solid, gas)	The product is not flammable.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapor pressure	No information available.
Relative vapor density	No information available.
Relative density	No information available.

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr-2K	

Water solubility	at 68 °F (20 °C) soluble
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	> 212 °F (> 100 °C)
Viscosity, dynamic	No information available.
Bulk density	ca. 1,100 kg/m ³
Particle size	Mean particle size 0.35 mm

SECTION 10. Stability and reactivity

Reactivity

Oxidizing agents

Chemical stability

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

Possibility of hazardous reactions

the constituents may react with:

boron phosphide, aluminum oxide, sodium thiosulfate, sodium phosphite, Polyvinyl chloride, Acetic anhydride, Alkali metals, sulfur, performic acid, oxidizable substances, carbon, Cyanides, combustible substances, Reducing agents, silver compounds, Heavy metals, strong alkalis, bases, Water, acids, Powdered metals

Conditions to avoid

Strong heating (decomposition).

Incompatible materials

no information available

Hazardous decomposition products

in the event of fire: See section 5.

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Eye contact, Skin contact, Ingestion

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number 114552 Version1.1
Product name Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 -
2.00 mg/l Cr
0.11 - 4.46 mg/l CrO₄ Spectroquant®
Cr-2K

Acute oral toxicity

Acute toxicity estimate: 1,079 mg/kg

Calculation method

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

absorption

Acute inhalation toxicity

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract, Lung edema

Skin irritation

Mixture causes skin irritation.

Eye irritation

Mixture causes serious eye irritation.

Sensitization

Mixture may cause an allergic skin reaction.

Mixture may cause allergy or asthma symptoms or breathing difficulties if inhaled.

Specific target organ systemic toxicity - single exposure

Mixture may cause respiratory irritation.

Specific target organ systemic toxicity - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard

Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version 1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr-2K	

Further information

After absorption of large quantities:

Methemoglobinemia with headache, cardiac arrhythmia, drop in blood pressure, dyspnoea, and spasms, key symptom: cyanosis (blue coloration of the blood).

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

Ingredients

sodium nitrate

Acute oral toxicity

LD50 rat: 1,267 mg/kg (RTECS)

Potassium persulfate

Acute oral toxicity

LD50 rat: 802 mg/kg (RTECS)

Sensitization

Human experience

Result: positive

(Lit.)

SECTION 12. Ecological information

Ecotoxicity

No information available.

Persistence and degradability

No information available.

Bioaccumulative potential

No information available.

Mobility in soil

No information available.

Other adverse effects

Additional ecological information

Hazard for drinking water supplies.

Discharge into the environment must be avoided.

Ingredients

sodium nitrate

Toxicity to fish

LC50 Ictalurus catus (catfish): 6,200 mg/l; 96 h (IUCLID)

Toxicity to daphnia and other aquatic invertebrates

EC50 Daphnia magna (Water flea): 3,581 mg/l; 48 h (IUCLID)

Biodegradability

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

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version 1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr-2K	

Potassium persulfate

Toxicity to fish

LC50 *Poecilia reticulata* (guppy): 100 mg/l; 96 h (Hommel)

Toxicity to daphnia and other aquatic invertebrates

EC50 *Daphnia magna* (Water flea): 357 mg/l; 24 h (Hommel)

Toxicity to bacteria

EC50 *Pseudomonas putida*: 36 mg/l (Hommel)

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)

UN number	UN3316
Proper shipping name	CHEMICAL KIT
Class	9
Packing group	II
Environmentally hazardous	--

Air transport (IATA)

UN number	UN 3316
Proper shipping name	CHEMICAL KIT
Class	9
Packing group	II
Environmentally hazardous	--
Special precautions for user	no

Sea transport (IMDG)

UN number	UN 3316
Proper shipping name	CHEMICAL KIT
Class	9
Packing group	II
Environmentally hazardous	--

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number 114552 Version 1.1
Product name Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr
0.11 - 4.46 mg/l CrO₄ Spectroquant®
Cr-2K

Special precautions for user yes
EmS F-A S-P

THIS TRANSPORT DATA APPLIES TO THE ENTIRE PACK!

SECTION 15. Regulatory information

United States of America

OSHA Hazards

Oxidizer
Harmful if swallowed.
Skin sensitizer
Respiratory sensitizer
Skin irritant
Eye irritant
Respiratory irritant

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

SARA 311/312 Hazards

Reactivity Hazard
Acute Health Hazard

SARA 313

The following components are subject to reporting levels established by SARA Title III, Section 313:

Ingredients

sodium nitrate 7631-99-4

SARA 302

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

DEA List I

Not listed

DEA List II

Not listed

US State Regulations

Massachusetts Right To Know

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number 114552 Version 1.1
Product name Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr
0.11 - 4.46 mg/l CrO₄ Spectroquant®
Cr-2K

Ingredients
sodium nitrate
Potassium persulfate

Pennsylvania Right To Know

Ingredients
sodium nitrate
Potassium persulfate

New Jersey Right To Know

Ingredients
sodium nitrate
Potassium persulfate

California Prop 65 Components

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL.

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

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

H272 May intensify fire; oxidizer.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.

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

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

Revision Date 07/22/2013

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr-2K	

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

All rights reserved. Millipore and the "M" Mark are registered trademarks of Merck KGaA, Darmstadt, Germany.



MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 07/22/2013

Version 1.1

SECTION 1. Identification

Product identifier

Catalog No. 114552

Product name Chromate Cell Test (chromium VI and total chromium) Method:
photometric 0.05 - 2.00 mg/l Cr
0.11 - 4.46 mg/l CrO₄ Spectroquant®

Cr-3K

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

Identified uses Reagent for analysis

Details of the supplier of the safety data sheet

Company EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821,
United States of America | SDS Phone Support: +1-978-715-1335 |
General Inquiries: +1-978-715-4321 | Monday to Friday, 9:00 AM to
4:00 PM Eastern Time (GMT-5)

Emergency telephone 800-424-9300 CHEMTREC (USA)
+1-703-527-3887 CHEMTREC (International)
24 Hours/day; 7 Days/week

SECTION 2. Hazards identification

GHS Classification

Corrosive to Metals, Category 1, H290

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

GHS-Labeling

Hazard pictograms



Signal Word
Warning

Hazard Statements

H290 May be corrosive to metals.

OSHA Hazards

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version 1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr-3K	

1910.1200).

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Chemical nature Solution in DMSO.

Hazardous ingredients

Chemical Name (Concentration)

CAS-No.

dimethyl sulphoxide (>= 70 % - < 90 %)

67-68-5

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

7664-38-2

SECTION 4. First aid measures

Description of first-aid measures

Inhalation

After inhalation: fresh air.

Skin contact

After skin contact: wash off with plenty of water. Remove contaminated clothing.

Eye contact

After eye contact: rinse out with plenty of water with the eyelid held wide open. Call in ophthalmologist if necessary.

Ingestion

After swallowing: immediately make victim drink water (two glasses at most). Subsequently administer: activated charcoal (20 - 40 g in 10% slurry). Consult a physician.

Most important symptoms and effects, both acute and delayed

irritant effects, Nausea, Headache, Tiredness, CNS disorders

Indication of any immediate medical attention and special treatment needed

Laxative: Sodium sulfate (1 tablespoon/1/4 l water).

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Water, Carbon dioxide (CO₂), Foam, Dry powder

Unsuitable extinguishing media

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

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version 1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr-3K	

Special hazards arising from the substance or mixture

Combustible material
Vapors are heavier than air and may spread along floors.
Forms explosive mixtures with air on intense heating.
Development of hazardous combustion gases or vapors possible in the event of fire.
Fire may cause evolution of:
Sulfur oxides, Oxides of phosphorus

Advice for firefighters

Special protective equipment for fire-fighters

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

Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

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

Advice for emergency responders: Protective equipment see section 8.

Environmental precautions

Do not empty into drains.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7 and 10).
Take up with liquid-absorbent and neutralizing material (e.g. Chemisorb® H⁺, Merck Art. No. 101595). Dispose of properly. Clean up affected area.

SECTION 7. Handling and storage

Precautions for safe handling

Observe label precautions.

Conditions for safe storage, including any incompatibilities

Tightly closed. Away from combustible materials and sources of ignition and heat.

Store at +15°C to +25°C (+59°F to +77°F).

The data applies to the entire pack.

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number 114552 Version1.1
Product name Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 -
2.00 mg/l Cr
0.11 - 4.46 mg/l CrO₄ Spectroquant®
Cr-3K

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

Basis	Value	Threshold limits	Remarks
<i>phosphoric acid (7664-38-2)</i>			
ACGIH	Time Weighted Average (TWA):	1 mg/m ³	
	Short Term Exposure Limit (STEL):	3 mg/m ³	
NIOSH/GUIDE	Recommended exposure limit (REL):	1 mg/m ³	
	Short Term Exposure Limit (STEL):	3 mg/m ³	
OSHA_TRANS	PEL:	1 mg/m ³	
Z1A	Short Term Exposure Limit (STEL):	3 mg/m ³	
	Time Weighted Average (TWA):	1 mg/m ³	

Engineering measures

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Change contaminated clothing. Application of skin- protective barrier cream recommended. Wash hands after working with substance.

Eye/face protection

Safety glasses

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Respiratory protection

required when vapors/aerosols are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

SECTION 9. Physical and chemical properties

Physical state liquid

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version 1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr-3K	

Color	colorless
Odor	weak
Odor Threshold	No information available.
pH	ca. 3 - 4 at 68 °F (20 °C)
Melting point	No information available.
Boiling point	No information available.
Flash point	203 °F (95 °C) Method: open cup (Dimethylsulfoxide)
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	1.8 %(V) (Dimethylsulfoxide)
Upper explosion limit	63.0 %(V) (Dimethylsulfoxide)
Vapor pressure	0.6 hPa at 68 °F (20 °C) (Dimethylsulfoxide)
Relative vapor density	No information available.
Relative density	ca. 1.08 g/cm ³ at 68 °F (20 °C)
Water solubility	at 68 °F (20 °C) soluble
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version 1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr-3K	

Ignition temperature 572 - 576 °F (300 - 302 °C)
(Dimethylsulfoxide)

Corrosion May be corrosive to metals.

SECTION 10. Stability and reactivity

Reactivity

Forms explosive mixtures with air on intense heating.

Chemical stability

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

Possibility of hazardous reactions

Exothermic reaction with:

Risk of explosion with:

acid halides, Sulfur trioxide, Sulfur oxides, Strong oxidizing agents, Oxides of phosphorus, nonmetallic halides, Nitric acid, silver salt, silicon compounds, nitrogen dioxide, potassium permanganate, Ketones, Halogenated hydrocarbon, oxyhalogenic compounds, Alkali metals, Potassium, sodium, iron(III) compounds, hydrides, nitrates, halogen-halogen compounds, perchloric acid, perchlorates, chlorates, nonmetallic oxyhalides

Conditions to avoid

Strong heating.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

Incompatible materials

various plastics, Metals

Hazardous decomposition products

in the event of fire: See section 5.

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Inhalation, Eye contact, Skin contact

Target Organs

Skin

Eyes

Respiratory system

Skin irritation

Possible damages: slight irritation

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version 1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr-3K	

Eye irritation

Possible damages: slight irritation

Specific target organ systemic toxicity - single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ systemic toxicity - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard

Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information

Quantitative data on the toxicity of this product are not available.

Further toxicological data:

After uptake:

CNS disorders, Nausea, Tiredness, Headache

Possible damages:

Damage to:

Liver, Kidney

Further data:

However, when the product is handled appropriately, hazardous effects are unlikely to occur.

Handle in accordance with good industrial hygiene and safety practice.

Ingredients

dimethyl sulphoxide

Acute oral toxicity

LD50 rat: 14,500 mg/kg (RTECS)

Acute dermal toxicity

LD50 rat: 40,000 mg/kg (RTECS)

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version 1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr-3K	

Sensitization

Sensitization test: guinea pig
Result: negative
(IUCLID)

Germ cell mutagenicity

Genotoxicity in vitro

Ames test
Result: negative
(IUCLID)

Mutagenicity (mammal cell test): chromosome aberration.

Result: negative
(National Toxicology Program)

Carcinogenicity

No indication of carcinogenic activity. (IUCLID)

Teratogenicity

Did not show teratogenic effects in animal experiments. (IUCLID)

phosphoric acid

Acute oral toxicity

LD50 rat: 1,530 mg/kg (IUCLID) (Regulation (EC) No 1272/2008, Annex VI)

Acute inhalation toxicity

LC50 rat: > 0.85 mg/l; 1 h (RTECS)

Acute dermal toxicity

LD50 rabbit: 2,740 mg/kg (IUCLID)

Skin irritation

rabbit
Result: Causes burns.
(IUCLID)

Eye irritation

rabbit
Result: Causes burns.
(IUCLID)

Sensitization

Patch test: human
Result: negative
(IUCLID)

Germ cell mutagenicity

Genotoxicity in vitro

Ames test
Result: negative
(IUCLID)

SECTION 12. Ecological information

Ecotoxicity

No information available.

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr-3K	

Persistence and degradability

No information available.

Bioaccumulative potential

No information available.

Mobility in soil

No information available.

Other adverse effects

Additional ecological information

Discharge into the environment must be avoided.

Ingredients

dimethyl sulphoxide

Toxicity to fish

LC50 *Oncorhynchus mykiss* (rainbow trout): 38,500 mg/l; 96 h (ECOTOX Database)

Toxicity to bacteria

EC10 *Pseudomonas putida*: 7,100 mg/l; 16 h (IUCLID)

EC50 activated sludge: 10 - 100 mg/l; 30 min (IUCLID)

Biodegradability

3.1 %; 14 d

OECD Test Guideline 301C

Not readily biodegradable.

phosphoric acid

Toxicity to fish

LC50 *Gambusia affinis* (Mosquito fish): 138 mg/l; 96 h (External MSDS)

Toxicity to bacteria

EC50 activated sludge: 270 mg/l(IUCLID)

Biodegradability

Does not cause biological oxygen deficit.

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version 1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr-3K	

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)

UN number	UN3316
Proper shipping name	CHEMICAL KIT
Class	9
Packing group	II
Environmentally hazardous	--

Air transport (IATA)

UN number	UN 3316
Proper shipping name	CHEMICAL KIT
Class	9
Packing group	II
Environmentally hazardous	--
Special precautions for user	no

Sea transport (IMDG)

UN number	UN 3316
Proper shipping name	CHEMICAL KIT
Class	9
Packing group	II
Environmentally hazardous	--
Special precautions for user	yes
EmS	F-A S-P

THIS TRANSPORT DATA APPLIES TO THE ENTIRE PACK!

SECTION 15. Regulatory information

United States of America

OSHA Hazards

Target organ effects
Highly toxic by inhalation
Harmful if swallowed.

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version 1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr-3K	

Corrosive to skin
Corrosive to eyes
Corrosive by inhalation.

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

SARA 311/312 Hazards

Acute Health Hazard
Chronic Health Hazard

SARA 313

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 302

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Ingredients

phosphoric acid

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Ingredients

phosphoric acid

DEA List I

Not listed

DEA List II

Not listed

US State Regulations

Massachusetts Right To Know

Ingredients

phosphoric acid

Pennsylvania Right To Know

Ingredients

dimethyl sulphoxide

water

phosphoric acid

New Jersey Right To Know

Ingredients

dimethyl sulphoxide

water

phosphoric acid

MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number	114552	Version 1.1
Product name	Chromate Cell Test (chromium VI and total chromium) Method: photometric 0.05 - 2.00 mg/l Cr 0.11 - 4.46 mg/l CrO ₄ Spectroquant® Cr-3K	

California Prop 65 Components

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL.

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

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

H290 May be corrosive to metals.

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

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

Revision Date 07/22/2013

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

All rights reserved. Millipore and the "M" Mark are registered trademarks of Merck KGaA, Darmstadt, Germany.