

## SAFETY DATA SHEET

Creation Date 08-Jul-2009

Revision Date 23-May-2017

Revision Number 3

### 1. Identification

**Product Name** Potassium dichromate

**Cat No. :** P1863, P186500, P1883, P188100, P188500

**Synonyms** Potassium bichromate.; Dipotassium dichromate; Dichromic acid, dipotassium salt

**Recommended Use** Laboratory chemicals.

**Uses advised against** Not for food, drug, pesticide or biocidal product use

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

##### Company

Fisher Scientific  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

##### **Emergency Telephone Number**

For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

### 2. Hazard(s) identification

#### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

|   |              |
|---|--------------|
| Oxidizing solids  | Category 2   |
| Acute oral toxicity                                       | Category 3   |
| Acute dermal toxicity                                     | Category 1   |
| Acute Inhalation Toxicity - Dusts and Mists               | Category 2   |
| Skin Corrosion/Irritation                                 | Category 1 B |
| Serious Eye Damage/Eye Irritation                         | Category 1   |
| Respiratory Sensitization                                 | Category 1   |
| Skin Sensitization  | Category 1   |
| Germ Cell Mutagenicity                                    | Category 1B  |
| Carcinogenicity   | Category 1A  |
| Reproductive Toxicity                                     | Category 1B  |
| Specific target organ toxicity (single exposure)          | Category 3   |
| Target Organs - Respiratory system.                       |              |
| Specific target organ toxicity - (repeated exposure)      | Category 1   |
| Target Organs - Respiratory system, Liver, Kidney, Blood. |              |

#### Label Elements

##### **Signal Word**

Danger

##### **Hazard Statements**

May intensify fire; oxidizer

Toxic if swallowed  
Fatal in contact with skin  
Causes severe skin burns and eye damage  
May cause respiratory irritation  
May cause an allergic skin reaction  
Fatal if inhaled  
May cause allergy or asthma symptoms or breathing difficulties if inhaled  
May cause genetic defects  
May cause cancer  
May damage fertility. May damage the unborn child  
May damage fertility. Suspected of damaging the unborn child  
Causes damage to organs through prolonged or repeated exposure



### Precautionary Statements

#### Prevention

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Use personal protective equipment as required  
Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Do not get in eyes, on skin, or on clothing  
Do not breathe dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Wear respiratory protection  
In case of inadequate ventilation wear respiratory protection  
Contaminated work clothing should not be allowed out of the workplace  
Wear protective gloves  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
Keep/Store away from clothing/ other combustible materials  
Take any precaution to avoid mixing with combustibles

#### Response

Immediately call a POISON CENTER or doctor/physician

#### Inhalation

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

#### Skin

Wash contaminated clothing before reuse  
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
If skin irritation or rash occurs: Get medical advice/attention

#### Eyes

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

#### Ingestion

Rinse mouth  
Do NOT induce vomiting

#### Fire

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction

#### Storage

Store locked up  
Store in a well-ventilated place. Keep container tightly closed

#### Disposal

Dispose of contents/container to an approved waste disposal plant

#### Hazards not otherwise classified (HNOC)

Very toxic to aquatic life with long lasting effects

WARNING! This product contains a chemical known in the State of California to cause cancer, birth defects or other reproductive harm.

### 3. Composition / information on ingredients

| Component            | CAS-No    | Weight % |
|----------------------|-----------|----------|
| Potassium dichromate | 7778-50-9 | >95      |

### 4. First-aid measures

|  |   |
|--|---|
| <b>General Advice</b>                  | Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.   |
| <b>Eye Contact</b>                     | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.   |
| <b>Skin Contact</b>                    | Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.   |
| <b>Inhalation</b>                      | Move to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.  |
| <b>Ingestion</b>                       | Do not induce vomiting. Call a physician or Poison Control Center immediately.  |
| <b>Most important symptoms/effects</b> | Causes burns by all exposure routes. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation |
| <b>Notes to Physician</b>              | Treat symptomatically   |

### 5. Fire-fighting measures

|   |  |
|---|--|
| <b>Suitable Extinguishing Media</b>     | Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. |
| <b>Unsuitable Extinguishing Media</b>   | No information available   |
| <b>Flash Point</b>                      | No information available   |
| <b>Method -</b>                         | No information available   |
| <b>Autoignition Temperature</b>         |  |
| <b>Explosion Limits</b>                 |  |
| <b>Upper</b>                            | No data available  |
| <b>Lower</b>                            | No data available  |
| <b>Oxidizing Properties</b>             | Oxidizer   |
| <b>Sensitivity to Mechanical Impact</b> | No information available   |
| <b>Sensitivity to Static Discharge</b>  | No information available   |

#### Specific Hazards Arising from the Chemical

The product causes burns of eyes, skin and mucous membranes. Oxidizer: Contact with combustible/organic material may cause fire. May ignite combustibles (wood paper, oil, clothing, etc.). Do not allow run-off from fire fighting to enter drains or water courses.

#### Hazardous Combustion Products

Chromium oxide

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

**NFPA**

|                    |                          |                         |                               |
|--------------------|--------------------------|-------------------------|-------------------------------|
| <b>Health</b><br>4 | <b>Flammability</b><br>0 | <b>Instability</b><br>1 | <b>Physical hazards</b><br>OX |
|--------------------|--------------------------|-------------------------|-------------------------------|

**6. Accidental release measures****Personal Precautions**

Use personal protective equipment. Evacuate personnel to safe areas. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid dust formation.

**Environmental Precautions**

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. Should not be released into the environment.

**Methods for Containment and Clean Up**

Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Sweep up and shovel into suitable containers for disposal.

**7. Handling and storage****Handling**

Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not ingest. Do not breathe vapors/dust. Avoid dust formation. Keep away from clothing and other combustible materials.

**Storage**

Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store near combustible materials. Corrosives area.

**8. Exposure controls / personal protection****Exposure Guidelines**

| Component            | ACGIH TLV                   | OSHA PEL   | NIOSH IDLH  | Mexico OEL (TWA)                                       |
|----------------------|-----------------------------|--|---|--|
| Potassium dichromate | TWA: 0.05 mg/m <sup>3</sup> | (Vacated) Ceiling: 0.1 mg/m <sup>3</sup><br>Ceiling: 0.1 mg/m <sup>3</sup> | IDLH: 15 mg/m <sup>3</sup><br>TWA: 0.0002 mg/m <sup>3</sup> | TWA: 0.05 mg/m <sup>3</sup> TWA: 0.5 mg/m <sup>3</sup> |

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

**Engineering Measures**

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

**Personal Protective Equipment****Eye/face Protection**

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin and body protection**

Long sleeved clothing.

**Respiratory Protection**

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

|   |   |
|---|---|
| <b>Physical State</b>                         | Solid   |
| <b>Appearance</b>                             | Orange  |
| <b>Odor</b>                                   | Odorless                                      |
| <b>Odor Threshold</b>                         | No information available                      |
| <b>pH</b>                                     | 4 (5 %)                                       |
| <b>Melting Point/Range</b>                    | 398 °C / 748.4 °F                             |
| <b>Boiling Point/Range</b>                    | 500 °C / 932 °F                               |
| <b>Flash Point</b>                            | No information available                      |
| <b>Evaporation Rate</b>                       | Not applicable                                |
| <b>Flammability (solid,gas)</b>               | No information available                      |
| <b>Flammability or explosive limits</b>       |   |
| <b>Upper</b>                                  | No data available                             |
| <b>Lower</b>                                  | No data available                             |
| <b>Vapor Pressure</b>                         | No information available                      |
| <b>Vapor Density</b>                          | Not applicable                                |
| <b>Specific Gravity</b>                       | 2.676   |
| <b>Solubility</b>                             | soluble                                       |
| <b>Partition coefficient; n-octanol/water</b> | No data available                             |
| <b>Autoignition Temperature</b>               |   |
| <b>Decomposition Temperature</b>              | > 500°C                                       |
| <b>Viscosity</b>                              | Not applicable                                |
| <b>Molecular Formula</b>                      | Cr <sub>2</sub> K <sub>2</sub> O <sub>7</sub> |
| <b>Molecular Weight</b>                       | 294.19  |

## 10. Stability and reactivity

|   |  |
|---|--|
| <b>Reactive Hazard</b>                  | Yes  |
| <b>Stability</b>                        | Oxidizer: Contact with combustible/organic material may cause fire.  |
| <b>Conditions to Avoid</b>              | Incompatible products. Excess heat. Combustible material. Avoid dust formation.  |
| <b>Incompatible Materials</b>           | Strong oxidizing agents, Reducing agents, Acids, Strong bases, Acid anhydrides, Strong reducing agents, Combustible material |
| <b>Hazardous Decomposition Products</b> | Chromium oxide   |
| <b>Hazardous Polymerization</b>         | Hazardous polymerization does not occur.   |
| <b>Hazardous Reactions</b>              | None under normal processing.  |

## 11. Toxicological information

### Acute Toxicity

#### Product Information

#### Component Information

| Component            | LD50 Oral         | LD50 Dermal           | LC50 Inhalation    |
|----------------------|-------------------|-----------------------|--------------------|
| Potassium dichromate | 130 mg/kg ( Rat ) | 1150 mg/kg ( Rabbit ) | 0.09 mg/L/4h (Rat) |

**Toxicologically Synergistic Products** No information available

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

|                        |  |
|------------------------|--|
| <b>Irritation</b>      | Causes burns by all exposure routes  |
| <b>Sensitization</b>   | No information available   |
| <b>Carcinogenicity</b> | The table below indicates whether each agency has listed any ingredient as a carcinogen. |

| Component            | CAS-No    | IARC    | NTP   | ACGIH | OSHA | Mexico |
|----------------------|-----------|---------|-------|-------|------|--------|
| Potassium dichromate | 7778-50-9 | Group 1 | Known | A1    | X    | A1     |

IARC: (International Agency for Research on Cancer)

IARC: (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)

Known - Known Carcinogen

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

NTP: (National Toxicity Program)

ACGIH: (American Conference of Governmental Industrial Hygienists)

A1 - Known Human Carcinogen

A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)

Mexico - Occupational Exposure Limits - Carcinogens

Mexico - Occupational Exposure Limits - Carcinogens

A1 - Confirmed Human Carcinogen

A2 - Suspected Human Carcinogen

A3 - Confirmed Animal Carcinogen

A4 - Not Classifiable as a Human Carcinogen

A5 - Not Suspected as a Human Carcinogen

|  |   |
|--|---|
| <b>Mutagenic Effects</b>                         | May cause heritable genetic damage  |
| <b>Reproductive Effects</b>                      | May impair fertility.   |
| <b>Developmental Effects</b>                     | Component substance is listed on California Proposition 65 as a developmental hazard.   |
| <b>Teratogenicity</b>                            | May cause harm to the unborn child.   |
| <b>STOT - single exposure</b>                    | Respiratory system  |
| <b>STOT - repeated exposure</b>                  | Respiratory system Liver Kidney Blood   |
| <b>Aspiration hazard</b>                         | No information available  |
| <b>Symptoms / effects,both acute and delayed</b> | Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation |
| <b>Endocrine Disruptor Information</b>           | No information available  |
| <b>Other Adverse Effects</b>                     | The toxicological properties have not been fully investigated.  |

## 12. Ecological information

### Ecotoxicity

The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.

| Component            | Freshwater Algae | Freshwater Fish   | Microtox   | Water Flea         |
|----------------------|------------------|---|------------|--------------------|
| Potassium dichromate | Not listed       | LC50: = 26 mg/L, 96h static (Morone saxatilis)<br>LC50: 23 - 41.2 mg/L, 96h static (Poecilia reticulata)<br>LC50: 24.81 - 34.55 mg/L, 96h semi-static (Poecilia reticulata)<br>LC50: 14 - 20.9 mg/L, 96h static (Pimephales promelas)<br>LC50: 15.41 - 30.36 mg/L, 96h flow-through (Pimephales promelas) | Not listed | EC50: 1.4 mg/L 24h |

|  |  |   |  |  |
|--|--|---|--|--|
|  |  | LC50: 21.209 - 30.046 mg/L, 96h semi-static (Oryzias latipes)<br>LC50: = 12.3 mg/L, 96h semi-static (Oncorhynchus mykiss)<br>LC50: 65.6 - 137.6 mg/L, 96h static (Lepomis macrochirus)<br>LC50: = 320 mg/L, 96h (Lepomis macrochirus)<br>LC50: 113.6 - 155.7 mg/L, 96h flow-through (Lepomis macrochirus)<br>LC50: > 139 mg/L, 96h static (Cyprinus carpio) |  |  |
|--|--|---|--|--|

**Persistence and Degradability** May persist based on information available.

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Will likely be mobile in the environment due to its water solubility.

### 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

### 14. Transport information

#### DOT

**UN-No** UN3087  
**Proper Shipping Name** OXIDIZING SOLID, TOXIC, N.O.S.  
**Proper technical name** Potassium dichromate  
**Hazard Class** 5.1  
**Subsidiary Hazard Class** 6.1  
**Packing Group** II

#### TDG

**UN-No** UN3087  
**Proper Shipping Name** OXIDIZING SOLID, TOXIC, N.O.S.  
**Hazard Class** 5.1  
**Subsidiary Hazard Class** 6.1  
**Packing Group** II

#### IATA

**UN-No** UN3087  
**Proper Shipping Name** OXIDIZING SOLID, TOXIC, N.O.S.  
**Hazard Class** 5.1  
**Subsidiary Hazard Class** 6.1  
**Packing Group** II

#### IMDG/IMO

**UN-No** UN3087  
**Proper Shipping Name** OXIDIZING SOLID, TOXIC, N.O.S.  
**Hazard Class** 5.1  
**Subsidiary Hazard Class** 6.1  
**Packing Group** II

### 15. Regulatory information

All of the components in the product are on the following Inventory lists: X = listed

International Inventories

| Component            | TSCA | DSL | NDSL | EINECS    | ELINCS | NLP | PICCS | ENCS | AICS | IECSC | KECL |
|----------------------|------|-----|------|-----------|--------|-----|-------|------|------|-------|------|
| Potassium dichromate | X    | X   | -    | 231-906-6 | -      |     | X     | X    | X    | X     | X    |

**Legend:**

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

**U.S. Federal Regulations****TSCA 12(b)**

| Component            | TSCA 12(b) |
|----------------------|------------|
| Potassium dichromate | Section 6  |

**SARA 313**

| Component            | CAS-No    | Weight % | SARA 313 - Threshold Values % |
|----------------------|-----------|----------|-------------------------------|
| Potassium dichromate | 7778-50-9 | >95      | 0.1                           |

**SARA 311/312 Hazard Categories**

|                                   |     |
|-----------------------------------|-----|
| Acute Health Hazard               | Yes |
| Chronic Health Hazard             | Yes |
| Fire Hazard                       | No  |
| Sudden Release of Pressure Hazard | No  |
| Reactive Hazard                   | Yes |

**CWA (Clean Water Act)**

| Component            | CWA - Hazardous Substances | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants |
|----------------------|----------------------------|-----------------------------|------------------------|---------------------------|
| Potassium dichromate | X                          | 10 lb                       | X                      | -                         |

**Clean Air Act**

| Component            | HAPS Data | Class 1 Ozone Depletors | Class 2 Ozone Depletors |
|----------------------|-----------|-------------------------|-------------------------|
| Potassium dichromate | X         |                         | -                       |

**OSHA Occupational Safety and Health Administration**

Not applicable

| Component            | Specifically Regulated Chemicals                              | Highly Hazardous Chemicals |
|----------------------|---|----------------------------|
| Potassium dichromate | 5 µg/m <sup>3</sup> TWA<br>2.5 µg/m <sup>3</sup> Action Level | -                          |

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

| Component            | Hazardous Substances RQs | CERCLA EHS RQs |
|----------------------|--------------------------|----------------|
| Potassium dichromate | 10 lb                    | -              |

**California Proposition 65**

This product contains the following proposition 65 chemicals

| Component            | CAS-No    | California Prop. 65         | Prop 65 NSRL | Category                    |
|----------------------|-----------|-----------------------------|--------------|-----------------------------|
| Potassium dichromate | 7778-50-9 | Carcinogen<br>Developmental | 0.001 µg/day | Developmental<br>Carcinogen |



|  |  |  |  |  |
|--|--|--|--|--|
|  |  | Female Reproductive<br>Male Reproductive |  |  |
|--|--|--|--|--|

**U.S. State Right-to-Know Regulations**

| Component            | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|----------------------|---------------|------------|--------------|----------|--------------|
| Potassium dichromate | X             | X          | X            | X        | X            |

**U.S. Department of Transportation**

|                             |   |
|-----------------------------|---|
| Reportable Quantity (RQ):   | Y |
| DOT Marine Pollutant        | N |
| DOT Severe Marine Pollutant | N |

**U.S. Department of Homeland Security**

This product does not contain any DHS chemicals.

**Other International Regulations**

**Mexico - Grade** No information available

## 16. Other information

|                         |   |
|-------------------------|---|
| <b>Prepared By</b>      | Regulatory Affairs<br>Thermo Fisher Scientific<br>Email: EMSDS.RA@thermofisher.com  |
| <b>Creation Date</b>    | 08-Jul-2009   |
| <b>Revision Date</b>    | 23-May-2017   |
| <b>Print Date</b>       | 23-May-2017   |
| <b>Revision Summary</b> | This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). |

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**