

**1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****1.1 Product identifiers**Product name: **Potassium dichromate**CAS-No.: **7778-50-9**Product Number: **F78502****1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses: Laboratory chemicals, Manufacture of substances

**1.3 Details of the supplier of the safety data sheet**

Company : Philip Harris Ltd., 2 Gregory Street, Hyde, Cheshire, SK14 4HR,

UNITED KINGDOM

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Email: enquiries@philipharris.co.uk

**1.4 Emergency telephone number**Emergency Phone #: **+44 (0)845 1200 506****2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture**

**According to Regulation (EC) No1272/2008;** Oxidizing solids (Category 2), Carcinogenicity (Category 1B), Germ cell mutagenicity (Category 1B), Reproductive toxicity (Category 1B), Acute toxicity (Category 2), Acute toxicity (Category 3), Specific target organ toxicity - repeated exposure (Category 1), Acute toxicity (Category 4), Skin corrosion (Category 1B), Respiratory sensitization (Category 1), Skin sensitization (Category 1), Acute aquatic toxicity (Category 1), Chronic aquatic toxicity (Category 1)

**According to European Directive 67/548/EEC as amended:** Causes burns. May cause cancer. May cause heritable genetic damage. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Contact with combustible material may cause fire. May cause sensitization by inhalation and skin contact. May impair fertility. May cause harm to the unborn child. Very toxic by inhalation. Toxic if swallowed. Toxic: danger of serious damage to health by prolonged exposure through inhalation. Harmful in contact with skin.

**2.2 Label elements**

Pictogram

Signal word

Danger

**Hazard statement(s):** H372 Causes damage to organs through prolonged or repeated exposure.

H330 Fatal if inhaled. H314 Causes severe skin burns and eye damage. H272 May intensify fire; oxidiser. H301 Toxic if swallowed. H312 Harmful in contact with skin. H317 May cause an allergic skin reaction. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H340 May cause genetic defects. H350 May cause cancer. H410 Very toxic to aquatic life with long lasting effects. H360Fd May damage fertility. Suspected of damaging the unborn child.

**Precautionary statement(s):** P201 Obtain special instructions before use. P220 Keep/Store away from clothing/ combustible materials. P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. P273 Avoid release to the environment. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P284 Wear respiratory protection.



**Hazard symbol(s):**

**R-phrase(s):** R45 May cause cancer. R46 May cause heritable genetic damage. R60 May impair fertility. R61 May cause harm to the unborn child. R21 Also harmful in contact with skin. R25 Also toxic if swallowed. R26 Also very toxic by inhalation. R48/23 Also toxic: danger of serious damage to health by prolonged exposure through inhalation. R8 Contact with combustible material may cause fire. R34 Causes burns. R42/43 May cause sensitization by inhalation and skin contact. R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**S-phrase(s):** S53 Avoid exposure - obtain special instructions before use. S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S60 This material and its container must be disposed of as hazardous waste. S61 Avoid release to the environment. Refer to special instructions/ Safety data sheets. Restricted to professional users.

**2.3 Other hazards** – no data available.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substances

**Potassium dichromate** (Synonyms : Potassium bichromate)

Formula:  $K_2Cr_2O_7$   
Molecular Weight: 294.18  
CAS-No.: 7778-50-9  
EC-No.: 231-906-6  
Index-No.: 024-002-00-6

### 4. FIRST AID MEASURES

#### 4.1 Description of first aid measures

**General advice:** Consult a physician. Show this safety data sheet to the doctor in attendance.

**If inhaled:** If breathed in, move person into fresh air. If not breathing, give artificial respiration.

**In case of skin contact:** Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water.

**In case of eye contact:** Rinse thoroughly with plenty of water for at least 15 minutes.

**If swallowed:** Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water.

**4.2 Most important symptoms and effects, both acute and delayed:** no data available

**4.3 Indication of immediate medical attention and special treatment needed:** no data available

## 5. FIRE-FIGHTING MEASURES

### 5.1 Extinguishing media

**Suitable extinguishing media:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**5.2 Special hazards arising from the substance or mixture:** no data available

**5.3 Precautions for fire-fighters:** Wear self contained breathing apparatus for fire fighting if necessary.

**5.4 Further information:** Use water spray to cool unopened containers.

## 6. ACCIDENTAL RELEASE MEASURES

**6.1 Personal precautions, protective equipment and emergency procedures:** Wear respiratory protection. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Evacuate personnel to safe areas.

**6.2 Environmental precautions:** Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**6.3 Methods and materials for containment and cleaning up:** Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

**6.4 Reference to other sections:** For disposal see section 13.

## 7. HANDLING AND STORAGE

**7.1 Precautions for safe handling:** Avoid exposure - obtain special instructions before use. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking. Keep away from combustible material.

**7.2 Conditions for safe storage, including any incompatibilities:** Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

**7.3 Specific end uses:** no data available.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

Components with workplace control parameters

Component	CAS No.	Value	Control Parameters	Update
Potassium dichromate	7778-50-9	TWA	0.05mg/m <sup>3</sup>	1991-01-01

UK. EH40 WEL - Workplace Exposure Limits. Remarks Capable of causing cancer and/or heritable genetic damage. The identified substances include those which: - are assigned the risk phrases 'R45:

May cause cancer'; 'R46: may cause heritable genetic damage'; 'R49: May cause cancer by inhalation' or – a substance or process listed in Schedule 1 of COSHH. Capable of causing occupational asthma. The identified substances are those which: - are assigned the risk phrase 'R42: May cause sensitisation by inhalation'; or 'R42/43: May cause sensitisation by inhalation and skin contact' or - are listed in section C of HSE publication 'Asthmagen? Critical assessments of the evidence for agents implicated in occupational asthma' as updated from time to time, or any other substance which the risk assessment has shown to be a potential cause of occupational asthma. Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used. For this substance the classification and labeling was introduced in the 29th Adaptation to Technical Progress of the European Community's Dangerous Substances Directive

## **8.2 Exposure controls**

**Appropriate engineering controls:** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### **Personal protective equipment**

**Eye/face protection:** Face shield and safety glasses

**Skin protection:** The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Handle with gloves.

**Body Protection:** Choose body protection according to the amount and concentration of the dangerous substance at the work place.

**Respiratory protection:** Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

## **9. PHYSICAL AND CHEMICAL PROPERTIES**

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

- |  |                                   |  |
|--|-----------------------------------|--|
| a) Appearance:                                   | <b>Form:</b> Crystalline          | <b>Colour:</b> no data available       |
| b) Odour:  | no data available                 |  |
| c) Odour Threshold:                              | no data available                 |  |
| d) pH:   | pH 3.5 - 5.0 at 29.4 g/l at 25 °C |  |
| e) Melting/freezing point:                       | 398 °C                            | Melting point/range: no data available |
| f) Initial boiling point and boiling range:      | no data available                 |  |
| g) Flash point:                                  | no data available                 |  |
| h) Evaporation rate:                             | no data available                 |  |
| i) Flammability (solid, gas):                    | no data available                 |  |
| j) Upper/lower flammability or explosive limits: | no data available                 |  |
| k) Vapour pressure:                              | no data available                 |  |
| l) Vapour density:                               | no data available                 |  |
| m) Relative density:                             | 2.680 g/cm <sup>3</sup>           |  |

- n) Water solubility: ca.29.4 g/l at 20 °C  
o) Partition coefficient: n-octanol/water: 5  
p) Autoignition temperature: no data available  
q) Decomposition temperature: no data available  
r) Viscosity: no data available  
s) Explosive properties: no data available  
t) Oxidizing properties: no data available  
**9.2 Other safety information:** no data available

## 10. STABILITY AND REACTIVITY

**10.1 Reactivity:** no data available

**10.2 Chemical stability:** Stable under recommended storage conditions.

**10.3 Possibility of hazardous reactions:** no data available

**10.4 Conditions to avoid:** no data available

**10.5 Incompatible materials:** Organic materials, Do not store near acids., Powdered metals, Hydrazine

**10.6 Hazardous decomposition products:** formed under fire conditions. - Potassium oxides, Chromium oxides

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

**Acute toxicity:** LD50 Oral - rat - 25 mg/kg. Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye: Other. Behavioural: Somnolence (general depressed activity). Behavioural: Ataxia.

LC50 Inhalation - rat - female - 4 h - 29 mg/m<sup>3</sup>

LD50 Dermal - rabbit - 14 mg/kg. Remarks: Lungs, Thorax, or Respiration: Acute pulmonary edema. Diarrhoea Prolonged skin contact may cause skin irritation and/or dermatitis.

**Skin corrosion/irritation:** no data available

**Serious eye damage/eye irritation:** no data available

**Respiratory or skin sensitization:** May cause allergic respiratory reaction.

**Germ cell mutagenicity:** May alter genetic material.

In vivo tests showed mutagenic effects

**Carcinogenicity:** This is or contains a component that has been reported to be carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification. Possible human carcinogen. IARC: 1 - Group 1: Carcinogenic to humans (Potassium dichromate)

**Reproductive toxicity:** Presumed human reproductive toxicant

**Specific target organ toxicity - single exposure:** no data available

**Specific target organ toxicity - repeated exposure:** Inhalation - Causes damage to organs through prolonged or repeated exposure.

**Aspiration hazard:** no data available

### Potential health effects

**Inhalation** May be fatal if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

**Ingestion** Toxic if swallowed. Causes burns.

**Skin** Harmful if absorbed through skin. Causes skin burns.

**Eyes** Causes eye burns.

**Signs and Symptoms of Exposure:** Ulceration, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

**Additional Information:** RTECS: HX7680000

## 12. ECOLOGICAL INFORMATION

**12.1 Toxicity:** Toxicity to fish LC50 - *Lepomis macrochirus* - 0.131 mg/l - 96.0 h mortality NOEC - *Pimephales promelas* (fathead minnow) - 6 mg/l - 7.0 d

Toxicity to daphnia and other aquatic invertebrates. mortality

NOEC - *Daphnia* - 0.016 - 0.064 mg/l - 7 d

EC50 - *Daphnia magna* (Water flea) - 0.035 mg/l - 48 h

Toxicity to algae EC50 - *Pseudokirchneriella subcapitata* - 0.31 mg/l - 72 h

**12.2 Persistence and degradability:** no data available

**12.3 Bioaccumulative potential:** Bioaccumulation *Oncorhynchus mykiss* (rainbow trout) - 180 d  
Bioconcentration factor (BCF): 17.4

**12.4 Mobility in soil:** no data available

**12.5 Results of PBT and vPvB assessment:** no data available

**12.6 Other adverse effects:** Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

**Product:** Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

**Contaminated packaging:** Dispose of as unused product.

## 14. TRANSPORT INFORMATION

### 14.1 UN-Number

ADR/RID: 3086 IMDG: 3086 IATA: 3086

### 14.2 UN proper shipping name

ADR/RID: TOXIC SOLID, OXIDIZING, N.O.S. (Potassium dichromate)

IMDG: TOXIC SOLID, OXIDIZING, N.O.S. (Potassium dichromate)

IATA: TOXIC SOLID, OXIDIZING, N.O.S. (Potassium dichromate)

### 14.3 Transport hazard class(es)

ADR/RID: 6.1 (5.1) IMDG: 6.1 (5.1) IATA: 6.1 (5.1)

### 14.4 Packaging group

ADR/RID: I IMDG: I IATA: I

### 14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

**14.6 Special precautions for users:** EMS-No: F-A, S-Q, IATA Passenger: Not permitted for transport

## 15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:** no data available

**15.2 Chemical Safety Assessment:** no data available

## 16. OTHER INFORMATION

Acute Tox. Acute toxicity, Aquatic Acute Acute aquatic toxicity, Aquatic Chronic Chronic aquatic toxicity, Carc. Carcinogenicity, H272 May intensify fire; oxidiser. H301 Toxic if swallowed. H312 Harmful in contact with skin. H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction. H330 Fatal if inhaled. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H340 May cause genetic defects. H350 May cause cancer. H360 May damage fertility or the unborn child. H372 Causes damage to organs through prolonged or repeated exposure. H410 Very toxic to aquatic life with long lasting effects. Muta. Germ cell mutagenicity, Ox. Sol. Oxidizing solids, Repr. Reproductive toxicity, N Dangerous for the environment, O Oxidising, T+ Very toxic, R 8 Contact with combustible material may cause fire. R21 Harmful in contact with skin. R25 Toxic if swallowed. R26 Very toxic by inhalation. R34 Causes burns. R42/43 May cause sensitization by inhalation and skin contact. R45 May cause cancer. R46 May cause heritable genetic damage. R48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation. R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. R60 May impair fertility. R61 May cause harm to the unborn child. Repr.Cat.2 Toxic to Reproduction Category 2