

Safety data sheet
according to 1907/2006/EC, Article 31

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Version number 3

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: **Potassium Dichromate 0.02 mol/l with 80 g/l of Mercury(II) Sulfate**

Article number: 177085

Registration number

A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration, the registration is envisaged for a later registration deadline or it is a mixture.

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

No further relevant information available.

Application of the substance / the mixture Laboratory chemical

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

AppliChem GmbH
Ottoweg 4
D-64291 Darmstadt

Tel.: +49 (0)6151 93570
Fax.: +49 (0)6151 935711
msds@applichem.com

Further information obtainable from: Dept. Compliance

1.4 Emergency telephone number: +49(0)6151 93570 (Inside normal business hours)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Met. Corr. 1	H290	May be corrosive to metals.
Acute Tox. 3	H301	Toxic if swallowed.
Acute Tox. 2	H310	Fatal in contact with skin.
Acute Tox. 3	H331	Toxic if inhaled.
Skin Corr. 1A	H314	Causes severe skin burns and eye damage.
Muta. 1B	H340	May cause genetic defects.
Carc. 1B	H350	May cause cancer.
Repr. 1B	H360FD	May damage fertility. May damage the unborn child.
STOT RE 2	H373	May cause damage to organs through prolonged or repeated exposure.
Aquatic Chronic 2	H411	Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

Hazard pictograms



GHS05 GHS06 GHS08 GHS09

Signal word Danger

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GB

Trade name: Potassium Dichromate 0.02 mol/l with 80 g/l of Mercury(II) Sulfate

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- **Hazard-determining components of labelling:**
mercury sulphate
sulphuric acid 95 - 97%
potassium dichromate
- **Hazard statements**
H290 May be corrosive to metals.
H301+H331 Toxic if swallowed or if inhaled.
H310 Fatal in contact with skin.
H314 Causes severe skin burns and eye damage.
H340 May cause genetic defects.
H350 May cause cancer.
H360FD May damage fertility. May damage the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.
- **Precautionary statements**
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
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+P311 IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- **3.2 Chemical characterisation: Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.

• **Dangerous components:**

CAS: 7664-93-9 EINECS: 231-639-5 Reg.nr.: 01-2119458838-20-XXXX	sulphuric acid 95 - 97% Met. Corr.1, H290; Skin Corr. 1A, H314	>15-≤20%
CAS: 7783-35-9 EINECS: 231-992-5	mercury sulphate Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330; STOT RE 2, H373; Aquatic Acute 1, H400; Aquatic Chronic 1, H410	>5-≤10%
CAS: 7778-50-9 EINECS: 231-906-6 Reg.nr.: 01-2119454792-32-XXXX	potassium dichromate Ox. Sol. 2, H272; Acute Tox. 3, H301; Acute Tox. 2, H330; Resp. Sens. 1, H334; Muta. 1B, H340; Carc. 1B, H350; Repr. 1B, H360FD; STOT RE 1, H372; Skin Corr. 1B, H314; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H312; Skin Sens. 1, H317	>0.1-≤1%

• **SVHC**

7778-50-9	potassium dichromate	0.59%
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- **Additional information:** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:**
Immediately remove any clothing soiled by the product.
Remove breathing equipment only after contaminated clothing have been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.

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Trade name: Potassium Dichromate 0.02 mol/l with 80 g/l of Mercury(II) Sulfate

(Contd. of page 2)

- **After inhalation:**
If breathing stops: mouth-to-mouth respiration or mechanical ventilation, oxygen mask if necessary.
Immediately call a physician.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**
Call a doctor immediately.
Immediately wash with water and soap and rinse thoroughly.
Dab with polyethylene glycol 400.
- **After eye contact:**
Rinse opened eye for several minutes under running water.
Call a doctor immediately.
- **After swallowing:** Drink plenty of water and provide fresh air. Call for a doctor immediately.
- **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **5.2 Special hazards arising from the substance or mixture**
sulfur oxides (SO₂, SO₃)
- **5.3 Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Do not inhale steams/aerosols.
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
- **6.2 Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (AppliSorb).
Use neutralising agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** Keep respiratory protective device available.

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Trade name: Potassium Dichromate 0.02 mol/l with 80 g/l of Mercury(II) Sulfate

(Contd. of page 3)

- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **Recommended storage temperature:** +15 - +25°C
- **Storage class:** 6.1 B
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

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

• 8.1 Control parameters

- **Ingredients with limit values that require monitoring at the workplace:**

7664-93-9 sulphuric acid 95 - 97%

WEL Long-term value: 0.05* mg/m³
*mist: defined as thoracic fraction

7783-35-9 mercury sulphate

WEL Long-term value: 0.02 mg/m³
as Hg

7778-50-9 potassium dichromate

WEL Long-term value: 0.05 mg/m³
as Cr; Carc, Sen, BMGV

• DNELs

7664-93-9 sulphuric acid 95 - 97%

Inhalative	Acute - local effects, worker	0.1 mg/m ³
	Long-term - local effects, worker	0.05 mg/m ³

7778-50-9 potassium dichromate

Inhalative	Acute - local effects, worker	0.028 mg/m ³
	Long-term - local effects, worker	0.028 mg/m ³

• PNECs

7664-93-9 sulphuric acid 95 - 97%

Aquatic compartment - freshwater	0.0025 mg/L
Aquatic compartment - marine water	0.00025 mg/L
Aquatic compartment - sediment in freshwater	0.002 mg/kg
Aquatic compartment - sediment in marine water	0.002 mg/kg
Sewage treatment plant	8.8 mg/L

7778-50-9 potassium dichromate

Aquatic compartment - freshwater	0.0047 mg/L
Aquatic compartment - marine water	0.00047 mg/L
Aquatic compartment - water, intermittent releases	mg/L
Aquatic compartment - sediment in freshwater	31 mg/kg
Aquatic compartment - sediment in marine water	3.1 mg/kg
Terrestrial compartment - soil	3.3 mg/kg
Sewage treatment plant	10 mg/L

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Trade name: Potassium Dichromate 0.02 mol/l with 80 g/l of Mercury(II) Sulfate

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· **Ingredients with biological limit values:**

7783-35-9 mercury sulphate

BMGV	20 µmol/mol creatinine Medium: urine Sampling time: random Parameter: mercury
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7778-50-9 potassium dichromate

BMGV	10 µmol/mol creatinine Medium: urine Sampling time: post shift Parameter: chromium
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· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

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

· **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
Filter ABEK

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **For the permanent contact gloves made of the following materials are suitable:**

Recommended thickness of the material: ≥ 0.7 mm

Fluorocarbon rubber (Viton)

Value for the permeation: Level ≥ 480 min

· **As protection from splashes gloves made of the following materials are suitable:**

Recommended thickness of the material: ≥ 0.7 mm

Butyl rubber, BR

Value for the permeation: Level ≥ 120 min

· **Eye protection:**



Tightly sealed goggles

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Trade name: Potassium Dichromate 0.02 mol/l with 80 g/l of Mercury(II) Sulfate

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· **Body protection:**

Protective work clothing

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled.

SECTION 9: Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form:	Fluid
Colour:	Orange
Odour:	Odourless

· **pH-value at 20 °C:** 0.5

· **Change in condition**

Melting point/freezing point: Undetermined.

Initial boiling point and boiling range: Undetermined.

· **Flash point:** Not applicable.

· **Auto-ignition temperature:** Product is not selfigniting.

· **Explosive properties:** Product does not present an explosion hazard.

· **Vapour pressure:** Not determined.

· **Density:** Not determined.

· **Solubility in / Miscibility with water:**

Fully miscible.

· **Viscosity:**

Dynamic: Not determined.

Kinematic: Not determined.

· **Solvent content:**

VOC (EC) 0.00 %

· **9.2 Other information** No further relevant information available.

SECTION 10: Stability and reactivity

· **10.1 Reactivity** No dangerous reactions known.

· **10.2 Chemical stability**

· **Thermal decomposition / conditions to be avoided:**

No decomposition if used according to specifications.

· **10.3 Possibility of hazardous reactions** No dangerous reactions known.

· **10.4 Conditions to avoid** No further relevant information available.

· **10.5 Incompatible materials:** No dangerous reactions known.

· **10.6 Hazardous decomposition products:** In the event of fire: See chapter 5

SECTION 11: Toxicological information

· **11.1 Information on toxicological effects**

· **Acute toxicity**

Toxic if swallowed or if inhaled.

Fatal in contact with skin.

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Trade name: Potassium Dichromate 0.02 mol/l with 80 g/l of Mercury(II) Sulfate

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• **LD/LC50 values relevant for classification:**

Components	Type	Value	Species
7664-93-9 sulphuric acid 95 - 97%			
Inhalative	LC50/2 h	510 mg/l (rat)	
7783-35-9 mercury sulphate			
Oral	LD50	57 mg/kg (rat)	
Dermal	LD50	625 mg/kg (rat)	
7778-50-9 potassium dichromate			
Oral	LD50	90.5 mg/kg (rat)	
Dermal	LD50	1,170 mg/kg (rat)	
Inhalative	LC50/4 h	0.083 mg/l (rat)	

- **Primary irritant effect:**
- **Skin corrosion/irritation**
Causes severe skin burns and eye damage.
- **Serious eye damage/irritation**
Causes severe skin burns and eye damage.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity**
May cause genetic defects.
- **Carcinogenicity**
May cause cancer.
- **Reproductive toxicity**
May damage fertility. May damage the unborn child.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure**
May cause damage to organs through prolonged or repeated exposure.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:**

Type of test	Effective concentration	Method	Assessment
7664-93-9 sulphuric acid 95 - 97%			
EC50	2,500 mg/l (Bakterien)		
	1.2 mg/l (fish)		
EC50/96 h	10 mg/l (Aquatic plants)		
EC50/24 h	29 mg/l (daphnia magna)		
	(bezogen auf die Reinsubstanz)		
7778-50-9 potassium dichromate			
EC50/72 h	0.31 mg/l (Algae)		
EC50/48 h	0.62 mg/l (daphnia magna)		
LC50/96 h	0.131 mg/l (fish)		
NOEC	6 mg/L (fish)		
	7 d		

- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Toxic for fish

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Trade name: Potassium Dichromate 0.02 mol/l with 80 g/l of Mercury(II) Sulfate

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• **Additional ecological information:**

• **General notes:**

Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Must not reach sewage water or drainage ditch undiluted or unneutralised.

Also poisonous for fish and plankton in water bodies.

Toxic for aquatic organisms

Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values.
A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
Danger to drinking water if even extremely small quantities leak into the ground.

• **12.5 Results of PBT and vPvB assessment**

• **PBT:** Not applicable.

• **vPvB:** Not applicable.

• **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

• **13.1 Waste treatment methods**

• **Recommendation**

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

• **Uncleaned packaging:**

• **Recommendation:** Disposal must be made according to official regulations.

• **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

SECTION 14: Transport information

• **14.1 UN-Number**

• **ADR, IMDG, IATA**

UN2922

• **14.2 UN proper shipping name**

• **ADR**

CORROSIVE LIQUID, TOXIC, N.O.S.
(SULPHURIC ACID, MERCURY SULPHATE),
ENVIRONMENTALLY HAZARDOUS

• **IMDG**

CORROSIVE LIQUID, TOXIC, N.O.S.
(SULPHURIC ACID, MERCURY SULPHATE),
MARINE POLLUTANT

• **IATA**

CORROSIVE LIQUID, TOXIC, N.O.S.
(SULPHURIC ACID, MERCURY SULPHATE)

• **14.3 Transport hazard class(es)**

• **ADR**



• **Class**

8 (CT1) Corrosive substances.

• **Label**

8+6.1

• **IMDG**





• **Class**

8 Corrosive substances.

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Trade name: Potassium Dichromate 0.02 mol/l with 80 g/l of Mercury(II) Sulfate

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· Label	8/6.1
· IATA	
 	
· Class	8 Corrosive substances.
· Label	8 (6.1)
· 14.4 Packing group	
· ADR, IMDG, IATA	II
· 14.5 Environmental hazards:	
· Marine pollutant:	Yes Symbol (fish and tree)
· Special marking (ADR):	Symbol (fish and tree)
· 14.6 Special precautions for user	Warning: Corrosive substances.
· Danger code (Kemler):	80
· EMS Number:	F-A,S-B
· Segregation groups	Acids
· Stowage Category	B
· Stowage Code	SW2 Clear of living quarters.
· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· Transport category	2
· Tunnel restriction code	E
· IMDG	
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 2922 CORROSIVE LIQUID, TOXIC, N.O.S. (SULPHURIC ACID, MERCURY SULPHATE), 8 (6.1), II, ENVIRONMENTALLY HAZARDOUS

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **Seveso category**
H2 ACUTE TOXIC
E2 Hazardous to the Aquatic Environment
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 50 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t

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Trade name: Potassium Dichromate 0.02 mol/l with 80 g/l of Mercury(II) Sulfate

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· **LIST OF SUBSTANCES SUBJECT TO AUTHORISATION (ANNEX XIV)**

7778-50-9 potassium dichromate

Sunset date: 2017-09-21

· **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 18, 28, 29, 47

· **National regulations:**

· **Other regulations, limitations and prohibitive regulations**

· **Substances of very high concern (SVHC) according to REACH, Article 57**

7778-50-9 potassium dichromate

0.59%

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

SECTION 16: Other information

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

· **Relevant phrases**

- H272 May intensify fire; oxidiser.
- H290 May be corrosive to metals.
- H300 Fatal if swallowed.
- H301 Toxic if swallowed.
- H310 Fatal in contact with skin.
- 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.
- H360FD May damage fertility. May damage the unborn child.
- H372 Causes damage to organs through prolonged or repeated exposure.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.

· **Department issuing SDS:** Dept. Compliance

· **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
VOC: Volatile Organic Compounds (USA, EU)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative
Ox. Sol. 2: Oxidizing solids – Category 2
Met. Corr.1: Corrosive to metals – Category 1
Acute Tox. 2: Acute toxicity – Category 2
Acute Tox. 3: Acute toxicity – Category 3
Acute Tox. 1: Acute toxicity – Category 1
Acute Tox. 4: Acute toxicity – Category 4
Skin Corr. 1A: Skin corrosion/irritation – Category 1A
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Resp. Sens. 1: Respiratory sensitisation – Category 1
Skin Sens. 1: Skin sensitisation – Category 1

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Trade name: Potassium Dichromate 0.02 mol/l with 80 g/l of Mercury(II) Sulfate

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Muta. 1B: Germ cell mutagenicity – Category 1B
Carc. 1B: Carcinogenicity – Category 1B
Repr. 1B: Reproductive toxicity – Category 1B
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2
· *** Data compared to the previous version altered.**

GB