



# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 17.09.2014

Version 1.2

## SECTION 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

Catalogue No.	104952
Product name	Potassium chromate for analysis EMSURE® ACS, Reag. Ph Eur
REACH 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 or the registration is envisaged for a later registration deadline.
CAS-No.	7789-00-6

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

Identified uses	Reagent for analysis For additional information on uses please refer to the Merck Chemicals portal ( <a href="http://www.merck-chemicals.com">www.merck-chemicals.com</a> ).
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### 1.3 Details of the supplier of the safety data sheet

Company	Merck KGaA * 64271 Darmstadt * Germany * Phone:+49 6151 72-0
Responsible Department	EHS Manager *+61 (3) 8727 6300 * Monday through Friday, 8:00am to 5:00pm (EST)
Regional representation	Merck Pty. Limited ABN 80 001 239 818 Ground Floor, Building 1 885 Mountain Highway Bayswater VIC 3153 Australia <a href="http://www.merckmillipore.com">www.merckmillipore.com</a>

### 1.4 Emergency telephone number

+61 (3) 8727 6300  
After hours: CHEMCALL 1800 127 406  
Poisons Information Centre : 13 1126

## SECTION 2. Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification (REGULATION (EC) No 1272/2008)

Skin irritation, Category 2, H315  
Eye irritation, Category 2, H319  
Skin sensitisation, Category 1, H317  
Germ cell mutagenicity, Category 1B, H340  
Carcinogenicity, Category 1B, Inhalation, H350i  
Specific target organ toxicity - single exposure, Category 3, Respiratory system, H335  
Acute aquatic toxicity, Category 1, H400  
Chronic aquatic toxicity, Category 1, H410

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

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**Classification (67/548/EEC or 1999/45/EC)**

Carc.Cat.2	Carcinogenic Category 2	R49
Mut.Cat.2	Mutagenic Category 2	R46
Xi	Irritant	R36/37/38
		R43
N	Dangerous for the environment	R50/53

For the full text of the R-phrases mentioned in this Section, see Section 16.

**2.2 Label elements**

**Labelling (REGULATION (EC) No 1272/2008)**

*Hazard pictograms*



*Signal word*

Danger

*Hazard statements*

H340 May cause genetic defects.  
H350i May cause cancer by inhalation.  
H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.  
H410 Very toxic to aquatic life with long lasting effects.

*Precautionary statements*

Prevention

P201 Obtain special instructions before use.  
P273 Avoid release to the environment.  
P280 Wear protective gloves.

Response

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.  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Restricted to professional users.

**Reduced labelling ( $\leq 125$  ml)**

*Hazard pictograms*



*Signal word*

Danger

*Hazard statements*

H340 May cause genetic defects.  
H350i May cause cancer by inhalation.  
H317 May cause an allergic skin reaction.

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*Precautionary statements*

P201 Obtain special instructions before use.  
P280 Wear protective gloves.  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Restricted to professional users.

CAS-No. 7789-00-6

**2.3 Other hazards**

None known.

**SECTION 3. Composition/information on ingredients**

**3.1 Substance**

Formula	K <sub>2</sub> CrO <sub>4</sub>	CrK <sub>2</sub> O <sub>4</sub> (Hill)
EC-No.	232-140-5	
Molar mass	194.19 g/mol	

**Hazardous components (REGULATION (EC) No 1272/2008)**

*Chemical Name (Concentration)*

CAS-No.	Registration number	Classification
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potassium chromate (>= 50 % - <= 100 % )

*The concentration stated is the percentage by weight of chromate ions dissolved in water calculated with reference to the total weight of the mixture.*

7789-00-6	*)	Carcinogenicity, Category 1B, H350i Germ cell mutagenicity, Category 1B, H340 Eye irritation, Category 2, H319 Specific target organ toxicity - single exposure, Category 3, H335 Skin irritation, Category 2, H315 Skin sensitisation, Category 1, H317 Acute aquatic toxicity, Category 1, H400 Chronic aquatic toxicity, Category 1, H410 M-Factor: 10
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\*) 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 or the registration is envisaged for a later registration deadline.

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

**Hazardous components (1999/45/EC)**

*Chemical Name (Concentration)*

CAS-No.	Classification
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potassium chromate (>= 50 % - <= 100 % )

*The concentration stated is the percentage by weight of chromate ions dissolved in water calculated with reference to the total weight of the mixture.*

7789-00-6	Carc.Cat.2; R49 Mut.Cat.2; R46 Xi, Irritant; R36/37/38 R43 N, Dangerous for the environment; R50-53 M-Factor: 10
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For the full text of the R-phrases mentioned in this Section, see Section 16.

**3.2 Mixture**

Not applicable

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## SECTION 4. First aid measures

### 4.1 Description of first aid measures

#### *General advice*

First aider needs to protect himself.

After inhalation: fresh air. Call in physician.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical attention.

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

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

### 4.2 Most important symptoms and effects, both acute and delayed

Allergic reactions, irritant effects, Cough, Shortness of breath

Chromium(VI) is highly toxic. It is absorbed via both the lungs and the gastrointestinal tract.

Being strong oxidisers, chromates/ bichromates can cause burns and ulcerations on the skin and mucous membranes and also irritations in the upper respiratory tract. Poorly healing ulcers occur after wound contact. In predisposed persons the substance rapidly leads to sensitisation and allergic reactions of the respiratory tract (risk of pneumonia!) and damage to nasal mucous membranes (under given circumstances perforation of the septum). After swallowing severe symptoms in the gastrointestinal tract such as bloody diarrhoea, vomiting (aspiration pneumonia!), spasms, circulatory collapse, unconsciousness, formation of methaemoglobin.

Absorption may result in hepatic and renal damage. Inhalable chromium(VI) compounds gave clear evidence to be carcinogenic in animal experiments. Lethal dose (man): 0.5g. Antidotes: chelating agents such as EDTA, DMPS (Demaval®)

### 4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

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## SECTION 5. Firefighting measures

### 5.1 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.

### 5.2 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 vapours.

### 5.3 Advice for firefighters

#### *Special protective equipment for firefighters*

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*

Prevent fire extinguishing water from contaminating surface water or the ground water system.

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**SECTION 6. Accidental release measures**

**6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Avoid generation and inhalation of dusts in all circumstances. 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.

**6.2 Environmental precautions**

Do not empty into drains.

**6.3 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 carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

**6.4 Reference to other sections**

Indications about waste treatment see section 13.

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**SECTION 7. Handling and storage**

**7.1 Precautions for safe handling**

*Advice on safe handling*

Work under hood. Do not inhale substance/mixture.

*Hygiene measures*

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

**7.2 Conditions for safe storage, including any incompatibilities**

*Storage conditions*

Dry. Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorised persons.

Recommended storage temperature see product label.

**7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

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

**8.1 Control parameters**

*potassium chromate (7789-00-6)*

AU OEL	Time Weighted Average (TWA):	0.05 mg/m <sup>3</sup>	Expressed as: as Cr
	Time Weighted Average (TWA):	0.05 mg/m <sup>3</sup>	Expressed as: as Cr

**8.2 Exposure controls**

**Engineering measures**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

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**Individual protection measures**

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

*Eye/face protection*

Safety glasses

*Hand protection*

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0.11 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0.11 mm
Break through time:	> 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

*Other protective equipment*

protective clothing

*Respiratory protection*

required when dusts are generated.

Recommended Filter type: Filter P 3 (acc. to DIN 3181) for solid and liquid particles of toxic and very toxic substances

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

**Environmental exposure controls**

Do not empty into drains.

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**SECTION 9. Physical and chemical properties**

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

Form	solid
Colour	yellow
Odour	odourless
Odour Threshold	Not applicable

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pH	9.0 - 9.8 at 50 g/l 20 °C
Melting point	985 °C
Boiling point/boiling range	1,000 °C
Flash point	No information available.
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.
Vapour pressure	low
Relative vapour density	No information available.
Density	2.73 g/cm <sup>3</sup> at 18 °C
Relative density	No information available.
Water solubility	637 g/l at 20 °C
Partition coefficient: n-octanol/water	No information available.
Auto-ignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	Oxidising potential

## 9.2 Other data

Bulk density ca. 1,400 kg/m<sup>3</sup>

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## SECTION 10. Stability and reactivity

### 10.1 Reactivity

See section 10.3

### 10.2 Chemical stability

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

### 10.3 Possibility of hazardous reactions

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Violent reactions possible with:

Reducing agents, chlorates

Risk of ignition or formation of inflammable gases or vapours with:

organic combustible substances, glycerol

Exothermic reaction with:

Sulphides, phosphides

Risk of explosion/exothermic reaction with:

hydrazine and derivatives, hydroxylamine, oxidisable substances

**10.4 Conditions to avoid**

no information available

**10.5 Incompatible materials**

no information available

**10.6 Hazardous decomposition products**

no information available

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**SECTION 11. Toxicological information**

**11.1 Information on toxicological effects**

*Acute oral toxicity*

This information is not available.

*Acute inhalation toxicity*

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

*Acute dermal toxicity*

This information is not available.

*Skin irritation*

Causes skin irritation.

*Eye irritation*

Causes serious eye irritation.

*Sensitisation*

May cause an allergic skin reaction.

*Germ cell mutagenicity*

This information is not available.

*Carcinogenicity*

This information is not available.

*Reproductive toxicity*

This information is not available.

*Teratogenicity*

This information is not available.

*CMR effects*

Carcinogenicity:

May cause cancer by inhalation.

Mutagenicity:

May cause genetic defects.



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*Specific target organ toxicity - single exposure*

Target Organs: Respiratory system  
May cause respiratory irritation.

*Specific target organ toxicity - repeated exposure*

This information is not available.

*Aspiration hazard*

This information is not available.

## 11.2 Further information

Chromium(VI) is highly toxic. It is absorbed via both the lungs and the gastrointestinal tract. Being strong oxidisers, chromates/ bichromates can cause burns and ulcerations on the skin and mucous membranes and also irritations in the upper respiratory tract. Poorly healing ulcers occur after wound contact. In predisposed persons the substance rapidly leads to sensitisation and allergic reactions of the respiratory tract (risk of pneumonia!) and damage to nasal mucous membranes (under given circumstances perforation of the septum). After swallowing severe symptoms in the gastrointestinal tract such as bloody diarrhoea, vomiting (aspiration pneumonia!), spasms, circulatory collapse, unconsciousness, formation of methaemoglobin. Absorption may result in hepatic and renal damage. Inhalable chromium(VI) compounds gave clear evidence to be carcinogenic in animal experiments. Lethal dose (man): 0.5g. Antidotes: chelating agents such as EDTA, DMPS (Demaval®)

This substance should be handled with particular care.

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## SECTION 12. Ecological information

### 12.1 Toxicity

*Toxicity to fish*

LC50 Pimephales promelas (fathead minnow): 39.8 mg/l; 96 h (ECOTOX Database)

*Toxicity to daphnia and other aquatic invertebrates*

EC50 Daphnia magna (Water flea): 0.02 mg/l; 48 h (ECOTOX Database)

### 12.2 Persistence and degradability

*Biodegradability*

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

### 12.3 Bioaccumulative potential

No information available.

### 12.4 Mobility in soil

No information available.

### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

### 12.6 Other adverse effects

*Additional ecological information*

Discharge into the environment must be avoided.

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**SECTION 13. Disposal considerations**

*Waste treatment methods*

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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**SECTION 14. Transport information**

**Land transport (ADR/RID)**

14.1 UN number	UN 3288
14.2 Proper shipping name	TOXIC SOLID, INORGANIC, N.O.S. (POTASSIUM CHROMATE)
14.3 Class	6.1
14.4 Packing group	II
14.5 Environmentally hazardous	yes
14.6 Special precautions for user	yes
Tunnel restriction code	D/E

**Inland waterway transport (ADN)**

Not relevant

**Air transport (IATA)**

14.1 UN number	UN 3288
14.2 Proper shipping name	TOXIC SOLID, INORGANIC, N.O.S. (POTASSIUM CHROMATE)
14.3 Class	6.1
14.4 Packing group	II
14.5 Environmentally hazardous	yes
14.6 Special precautions for user	no

**Sea transport (IMDG)**

14.1 UN number	UN 3288
14.2 Proper shipping name	TOXIC SOLID, INORGANIC, N.O.S. (POTASSIUM CHROMATE)
14.3 Class	6.1
14.4 Packing group	II
14.5 Environmentally hazardous	yes
14.6 Special precautions for user	yes
EmS	F-A S-A

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**14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**  
Not relevant

**Other regulations**

Hazchem Code 2X

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**SECTION 15. Regulatory information**

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

*National legislation*

Storage class 6.1B

Standard for the Uniform S6

Scheduling of Medicines and

Poisons - Poisons Schedule

Number:

**15.2 Chemical Safety Assessment**

For this product a chemical safety assessment was not carried out.

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**SECTION 16. Other information**

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

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H340	May cause genetic defects.
H350i	May cause cancer by inhalation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

**Full text of R-phrases referred to under sections 2 and 3**

R36/37/38	Irritating to eyes, respiratory system and skin.
R43	May cause sensitisation by skin contact.
R46	May cause heritable genetic damage.
R49	May cause cancer by inhalation.
R50	Very toxic to aquatic organisms.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R53	May cause long-term adverse effects in the aquatic environment.

**Training advice**

Provide adequate information, instruction and training for operators.

**Labelling**

*Hazard pictograms*



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*Signal word*

Danger

*Hazard statements*

H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.  
H340 May cause genetic defects.  
H350i May cause cancer by inhalation.  
H410 Very toxic to aquatic life with long lasting effects.

*Precautionary statements*

Prevention



P201 Obtain special instructions before use.  
P273 Avoid release to the environment.  
P280 Wear protective gloves.

Response

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.  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Restricted to professional users.

**Labelling (67/548/EEC or 1999/45/EC)**



<i>Symbol(s)</i>	 T	Toxic
	 N	Dangerous for the environment
<i>R-phrase(s)</i>	49-46-36/37/38-43-50/53	May cause cancer by inhalation. May cause heritable genetic damage. Irritating to eyes, respiratory system and skin. May cause sensitisation by skin contact. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
<i>S-phrase(s)</i>	53-45-60-61	Avoid exposure - obtain special instructions before use. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/ Safety data sheets.

Further information

Restricted to professional users.

EC-No. 232-140-5

**Reduced labelling (≤125 ml)**

<i>Symbol(s)</i>	 T	Toxic
	 N	Dangerous for the environment
<i>R-phrase(s)</i>	49-46-43	May cause cancer by inhalation. May cause heritable genetic damage. May cause sensitisation by skin contact.
<i>S-phrase(s)</i>	53-45	Avoid exposure - obtain special instructions before use. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**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](http://www.wikipedia.org).

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*The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.*