Material Safety Data Sheet

Date Printed: 14/DEC/2004
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Version 1.1
According to 91/155/EEC

1 - Product and Company Information

Product Name	LEAD(II) CHROMATE, ACS
Product Number	15327
Company	Sigma-Aldrich Pte Ltd #08-01 Citilink Warehouse Singapore 118529 Singapore
Technical Phone #	65 271 1089
Fax	65 271 1571

2 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I Index Number
LEAD CHROMATE	7758-97-6	231-846-0	082-004-00-2

Formula	PbCrO4
Molecular Weight	323.18 AMU
Synonyms	Chromate de plomb (French) * Lead chromate * Lead chromate(VI) * Lead chromate (ACGIH) * Lead chromium oxide * Plumbous chromate

3 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT
May cause harm to the unborn child. Danger of cumulative effects. Limited evidence of a carcinogenic effect. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Possible risk of impaired fertility.
Carc. Cat.3 Repr. Cat.1 Repr. Cat.3

4 - First Aid Measures

AFTER INHALATION
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

AFTER SKIN CONTACT
In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

AFTER EYE CONTACT
In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

AFTER INGESTION
If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

5 - Fire Fighting Measures

EXTINGUISHING MEDIA
Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

SPECIAL RISKS
Specific Hazard(s): Emits toxic fumes under fire conditions. Contact with other material may cause fire. May accelerate combustion.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

6 - Accidental Release Measures

PERSONAL PRECAUTION PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL
Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)
Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves. Wear disposable coveralls and discard them after use.

METHODS FOR CLEANING UP
Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

7 - Handling and Storage

HANDLING
Directions for Safe Handling: Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE
Conditions of Storage: Keep tightly closed. Store in a cool dry place.
Unsuitable: Do not store near, nor allow contact with, clothing and other combustible material.

8 - Exposure Controls / Personal Protection

ENGINEERING CONTROLS
Use only in a chemical fume hood. Safety shower and eye bath.

GENERAL HYGIENE MEASURES
Wash contaminated clothing before reuse. Wash thoroughly after handling.

EXPOSURE LIMITS - DENMARK

Source	Type	Value
OEL	TWA	0.02 mg/m3

EXPOSURE LIMITS - GERMANY

Source	Type	Value

Remarks: 4
Remarks: 12,TRGS 901-3

EXPOSURE LIMITS - NORWAY

Source	Type	Value
	OEL	0.02 mg/m3

Remarks: KR

EXPOSURE LIMITS - UNITED KINGDOM

Source	Type	Value
OEL	TWA	0.05MG(CR)/M3

Remarks: Carcinogen.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator.
Hand Protection: Compatible chemical-resistant gloves.
Eye Protection: Chemical safety goggles.

9 - Physical and Chemical Properties

Appearance: Color: Deep yellow
Form: Powder

Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	N/A	
Flash Point	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	N/A	
Vapor Pressure	N/A	
SG/Density	6.3 g/cm3	
Partition Coefficient	N/A	
Viscosity	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	N/A	
Surface Tension	N/A	
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

10 - Stability and Reactivity

STABILITY

Stable: Stable.
Materials to Avoid: Organic materials, Finely powdered metals.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Nature of decomposition products not known.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

11 - Toxicological Information

RTECS NUMBER: GB2975000

ACUTE TOXICITY

LD50
Oral
Mouse
> 12000 mg/kg

SIGNS AND SYMPTOMS OF EXPOSURE

Lead salts have been reported to cross the placenta and to induce embryo- and feto- mortality. They also have teratogenic effect in some animal species. No teratogenic effects have been reported with exposure to organometallic lead compounds. Adverse effects of lead on human reproduction, embryonic and fetal development, and postnatal (e.g., mental) development have been reported. Excessive exposure can affect blood, nervous, and digestive systems. The synthesis of hemoglobin is inhibited and results in anemia. If left untreated, neuromuscular dysfunction, possible paralysis, and encephalopathy can result. Additional symptoms of overexposure include: joint and muscle pain, weakness of the extensor muscles (frequently the hand and wrist), headache, dizziness, abdominal pain, diarrhea, constipation, nausea, vomiting, blue line on the gums, insomnia, and metallic taste. High body levels produce increased cerebrospinal pressure, brain damage, and stupor leading to coma and often death. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.
Skin Absorption: May be harmful if absorbed through the skin.
Eye Contact: May cause eye irritation.
Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.
Ingestion: May be harmful if swallowed.

TARGET ORGAN INFORMATION

Lungs. Blood. Kidneys. Nerves. Female reproductive system. Male reproductive system.

CHRONIC EXPOSURE - CARCINOGEN

Result: This is or contains a component that has been reported to be carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

Rat
Route of Application: Subcutaneous
Result: Tumorigenic:Neoplastic by RTECS criteria. Tumorigenic:Tumors at site or application.

Rat
Route of Application: Intramuscular
Exposure Time: 39W
Result: Tumorigenic:Neoplastic by RTECS criteria. Kidney, Ureter, Bladder:Kidney tumors. Tumorigenic:Tumors at site or application.

Rat
Route of Application: Subcutaneous
Result: Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Tumorigenic:Tumors at site or application.

IARC CARCINOGEN LIST

Rating: Group 1

CHRONIC EXPOSURE - MUTAGEN

Human
500 NMOL/L
Cell Type: fibroblast
Morphological transformation.

Human
500 MG/L
Cell Type: Other cell types
Other mutation test systems

Human
13 UMOL/L
Cell Type: lymphocyte
Cytogenetic analysis

Human
500 MG/L
Cell Type: Other cell types
Cytogenetic analysis

Human
20 UMOL/L
Cell Type: lymphocyte
Sister chromatid exchange

Mouse
500 MG/KG
Intraperitoneal
Micronucleus test

Mouse
25 UMOL/L
Cell Type: fibroblast
Morphological transformation.

Hamster
156 MG/L
Cell Type: kidney
Morphological transformation.

Hamster
40 UMOL/L
Cell Type: Embryo
Morphological transformation.

Hamster
1 UMOL/L
Cell Type: ovary
DNA damage

Hamster
150 MG/L
Cell Type: kidney
DNA inhibition

Hamster
150 MG/L
Cell Type: kidney
Other mutation test systems

Hamster
5 MG/L
Cell Type: ovary
Cytogenetic analysis

Hamster
100 UG/L
Cell Type: ovary
Sister chromatid exchange

Hamster
8 UMOL/L
Cell Type: ovary
Mutation in mammalian somatic cells.

CHRONIC EXPOSURE - TERATOGEN
Result: May cause congenital malformation in the fetus.

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD
Result: May cause reproductive disorders. Lead salts have been reported to cross the placenta and to induce embryo- and feto-mortality. They also have a teratogenic effect in some animal species. No teratogenic effects have been reported with exposure to organometallic lead compounds. Adverse effects of lead on human reproduction, embryonic and fetal development, and postnatal (e.g., mental) development have been reported.
CMR CAT.: Carc. Cat.3

12 - Ecological Information

No data available.

13 - Disposal Considerations

SUBSTANCE DISPOSAL
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. Observe all federal, state, and local environmental regulations.

14 - Transport Information

RID/ADR
Non-hazardous for road transport.

IMDG
Non-hazardous for sea transport.

IATA
Non-hazardous for air transport.

15 - Regulatory Information

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES
ANNEX I INDEX NUMBER: 082-004-00-2
NOTA: 1

INDICATION OF DANGER: T N
Toxic. Dangerous for the environment.
R-PHRASES: 61 33 40 50/53 62
May cause harm to the unborn child. Danger of cumulative effects. Limited evidence of a carcinogenic effect. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Possible risk of impaired fertility.
S-PHRASES: 53 45 60 61
Restricted to professional users. Attention - 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.

SWITZERLAND
SWISS POISON CLASS: 3

16 - Other Information

WARRANTY
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

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