

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 06/16/2009

Reviewed on 06/16/2009

1 Identification of substance:**Product details:****Product name:** 2,2'-Bipyridinium chlorochromate**Stock number:** A16855**Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company
 Johnson Matthey Catalog Company, Inc.
 30 Bond Street
 Ward Hill, MA 01835-8099
 Emergency Phone: (978) 521-6300
 CHEMTREC: (800) 424-9300
 Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department**Emergency information:**

During normal hours the Health, Safety and Environmental Department. After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:**Chemical characterization:****Description: (CAS#)**

2,2'-Bipyridinium chlorochromate

(CAS# 76899-34-8): 100%

Identification number(s):**EINECS Number:** 278-569-1**Index number:** 024-017-00-8**3 Hazards identification****Hazard description:**

T Toxic

O Oxidizing

N Dangerous for the environment

Information pertaining to particular dangers for man and environment

R 49 May cause cancer by inhalation.

R 8 Contact with combustible material may cause fire.

R 43 May cause sensitization by skin contact.

R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Classification system**HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	3
FIRE	1
REACTIVITY	2

Health (acute effects) = 3

Flammability = 1

Reactivity = 2

GHS label elements**Danger**

2.14/2 - May intensify fire; oxidizer.

**Danger**

3.6/1B - May cause cancer.

**Warning**

4.1/1 - Very toxic to aquatic life with long lasting effects.

**Warning**

3.4/1 - May cause an allergic skin reaction.

(Contd. on page 2)

- USA -

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(Contd. of page 1)

Prevention:

Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
 Keep/Store away from clothing/combustible materials.
 Take any precaution to avoid mixing with combustibles.
 Avoid breathing dust/fume/gas/mist/vapours/spray.
 Contaminated work clothing should not be allowed out of the workplace.
 Avoid release to the environment.
 Wear protective gloves/protective clothing/eye protection/face protection.
 Use personal protective equipment as required.

Response:

IF ON SKIN: Wash with plenty of soap and water.
 IF exposed or concerned: Get medical advice/attention.
 Specific treatment (see label).
 If skin irritation or rash occurs: Get medical advice/attention.
 Wash contaminated clothing before reuse.
 In case of fire: Use for extinction: CO₂, powder or water spray.
 Collect spillage.

Storage:

Store locked up.

Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulations.

4 First aid measures

After inhalation

Supply fresh air and to be sure call for a doctor.
 Supply fresh air. If required, provide artificial respiration. Keep patient warm.
 Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.
 Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek immediate medical advice.

5 Fire fighting measures

Suitable extinguishing agents

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Nitrogen oxides (NO_x)

Toxic metal oxide fume

Hydrogen chloride (HCl)

This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

USA

(Contd. on page 3)

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 06/16/2009

Reviewed on 06/16/2009

Product name: 2,2'-Bipyridinium chlorochromate

(Contd. of page 2)

7 Handling and storage

Handling

Information for safe handling:

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Open and handle container with care.

Information about protection against explosions and fires:

Substance/product can reduce the ignition temperature of flammable substances.

This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.

Storage

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility:

Store away from flammable substances.

Store away from reducing agents.

Store in the dark.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Protect from exposure to light.

8 Exposure controls and personal protection

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

Chromium (VI) compounds, as Cr

	mg/m ³
ACGIH TLV	0.05; Confirmed human carcinogen
Belgium TWA	0.01 (insoluble)
	0.05 (water soluble)
Germany MAK	0.1 (production) (water soluble)
	0.5 (other applications) (water soluble)
Netherlands MAC-TGG	0.01 (water insoluble)
	0.025 (water soluble)
	0.05-STEEL (water soluble)
Poland TWA	0.025; 0.05-STEEL
Sweden TWA	0.02
United Kingdom TWA	0.05
USA PEL	0.005

Additional information: No data

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Breathing equipment: Use suitable respirator when high concentrations are present.

Protection of hands:

Impervious gloves

Check protective gloves prior to each use for their proper condition.

Material of gloves

The selection of suitable gloves not only depends on the material, but also on quality.

Quality will vary from manufacturer to manufacturer.

Eye protection: Safety glasses**Body protection:** Protective work clothing.

9 Physical and chemical properties:

General Information

Form:	Powder
Color:	Orange
Odor:	Not determined

(Contd. on page 4)

USA

Material Safety Data Sheet

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Reviewed on 06/16/2009

Product name: 2,2'-Bipyridinium chlorochromate

(Contd. of page 3)

Change in condition
Melting point/Melting range: Not determined
Boiling point/Boiling range: Not determined
Sublimation temperature / start: Not determined

Flash point: Not applicable

Flammability (solid, gaseous) Contact with combustible material may cause fire.

Ignition temperature: Not determined

Decomposition temperature: Not determined

Explosion limits:
Lower: Not determined
Upper: Not determined

Vapor pressure: Not determined

Density: Not determined

10 Stability and reactivity

Thermal decomposition / conditions to be avoided:
 Decomposition will not occur if used and stored according to specifications.

Materials to be avoided:

Reducing agents

Light

Dangerous reactions

Reacts with reducing agents

Reacts with flammable substances

Dangerous products of decomposition:

Carbon monoxide and carbon dioxide

Nitrogen oxides

Toxic metal oxide fume

Hydrogen chloride (HCl)

11 Toxicological information

Acute toxicity:

Primary irritant effect:

on the skin: Irritant to skin and mucous membranes.

on the eye: Irritating effect.

Sensitization: Sensitization possible through skin contact.

Subacute to chronic toxicity:

Chromium (VI) compounds may cause skin ulceration, gastrointestinal irritation with vomiting and diarrhea, kidney and liver damage. Overexposure may be fatal. Dusts are extremely irritating to the eyes, nose, throat and bronchial tubes. May cause cancers of the lungs, nasal cavity, sinuses, stomach and larynx.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

EPA-A: human carcinogen: sufficient evidence from epidemiologic studies to support a causal association between exposure and cancer.

IARC-1: Carcinogenic to humans: sufficient evidence of carcinogenicity.

NTP-1: Known to be carcinogenic: sufficient evidence from human studies.

ACGIH A1: Confirmed human carcinogen: Agent is carcinogenic to humans based on epidemiologic studies of, or convincing clinical evidence in, exposed humans.

12 Ecological information:

Ecotoxicological effects:

Remark: Very toxic for fish

General notes:

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Do not allow material to be released to the environment without proper governmental permits.

Very toxic for aquatic organisms

USA

(Contd. on page 5)

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Product name: 2,2'-Bipyridinium chlorochromate

(Contd. of page 4)

13 Disposal considerations

Product:

Recommendation Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

14 Transport information

DOT regulations:



Hazard class:

6.1

Identification number:

UN3086

Packing group:

II

Proper shipping name (technical name): TOXIC SOLID, OXIDIZING, N.O.S. (2,2'-Bipyridinium chlorochromate)

Label

6.1+5.1

Land transport ADR/RID (cross-border)



ADR/RID class:

6.1 (TO2) Toxic substances

Danger code (Kemler):

65

UN-Number:

3086

Packaging group:

II

Description of goods:

3086 TOXIC SOLID, OXIDIZING, N.O.S. (2,2'-Bipyridinium chlorochromate)

Maritime transport IMDG:



IMDG Class:

6.1

UN Number:

3086

Label

6.1+5.1

Packaging group:

II

Proper shipping name:

TOXIC SOLID, OXIDIZING, N.O.S. (2,2'-Bipyridinium chlorochromate)

Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class:

6.1

UN/ID Number:

3086

Label

6.1+5.1

Packaging group:

II

Proper shipping name:

TOXIC SOLID, OXIDIZING, N.O.S. (2,2'-Bipyridinium chlorochromate)

UN "Model Regulation": UN3086, TOXIC SOLID, OXIDIZING, N.O.S., 6.1 (5.1), II

Environmental hazards: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID

USA

(Contd. on page 6)

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Product name: 2,2'-Bipyridinium chlorochromate

(Contd. of page 5)

15 Regulations

Product related hazard informations:
Hazard symbols:

T Toxic
 O Oxidizing
 N Dangerous for the environment

Risk phrases:

49 May cause cancer by inhalation.
 8 Contact with combustible material may cause fire.
 43 May cause sensitization by skin contact.
 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Safety phrases:

53 Avoid exposure - obtain special instructions before use.
 17 Keep away from combustible material.
 45 In case of accident or if you feel unwell, seek medical advice immediately.
 60 This material and its container must be disposed of as hazardous waste.
 61 Avoid release to the environment. Refer to special instructions/Safety data sheets

Special labeling of certain preparations:

This product contains a chemical known to the state of California to cause cancer or reproductive toxicity.

National regulations

This product is not listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory. Use of this product is restricted to research and development only.
 Some or all of the components of this product are not listed on the Canadian Domestic Substances List (DSL) or the Canadian Non-Domestic Substances List (NDSL).

Information about limitation of use:

For use only by technically qualified individuals.
 This product contains chromium and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.

Contact: Zachariah Holt

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 IMDG: International Maritime Code for Dangerous Goods
 DOT: US Department of Transportation
 IATA: International Air Transport Association
 IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
 ICAO: International Civil Aviation Organization
 ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals
 EINECS: European Inventory of Existing Commercial Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 HMIS: Hazardous Materials Identification System (USA)

- USA -