Safety Data Sheet

Ammonium Dichromate

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Ammonium Dichromate

Synonyms/Generic Names: Ammonium Bichromate; Dichromic acid, diammonium salt

SDS Number: 44.00

Product Use: For Educational Use Only

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information Contact: Ward's Science
5100 West Henrietta Rd.
PO Box 92912-9012
Rochester, NY 14692
(800) 962-2660 (Monday-Friday 7:30-7:00 Eastern Time)

In Case of Emergency Call: CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

OSHA Hazards: Oxidizer, Carcinogen, Highly toxic by inhalation, Toxic by ingestion, Harmful by skin absorption., Skin and respiratory sensitizer, Corrosive, Teratogen, Reproductive hazard, Mutagen

Target Organs: Lungs, Kidney, Liver

Signal Words: Danger

Pictograms:

GHS Classification:

Oxidizing solids	Category 2
Acute toxicity, Oral	Category 3
Acute toxicity, Inhalation	Category 2
Acute toxicity, Dermal	Category 4
Skin corrosion	Category 1B
Serious eye damage	Category 1
Respiratory sensitization	Category 1
Skin sensitization	Category 1

Germ cell mutagenicity	Category 1B
Carcinogenicity	Category 1B
Reproductive toxicity	Category 1B
Specific target organ toxicity- repeated exposure	Category 1
Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1

GHS Label Elements, including precautionary statements:

Hazard Statements:

H272	May intensify fire; oxidizer.
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.

Precautionary Statements:

P201	Obtain special instructions before use.
P220	Keep/Store away from clothing/combustible materials.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	Wear respiratory protection.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contacts lenses, if present and easy to do so. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.
P501	Dispose of contents/container to an approved waste disposal plant.

Potential Health Effects

Eyes	Causes eye burns.
Inhalation	May be fatal if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Skin	Causes skin burns.
Ingestion	Toxic if swallowed.

NFPA Ratings

Health	4
Flammability	0
Reactivity	2
Specific hazard	OX

HMIS Ratings

Health	4
Fire	0
Reactivity	2
Personal	E

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
Ammonium Dichromate	>97	7789-09-5	232-143-1	$H_8Cr_2N_2O_7$	252.06 g/mol

4. FIRST-AID MEASURES

Eyes	Immediately rinse with plenty of water for at least 15 minutes and seek medical attention immediately.
Inhalation	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention immediately.
Skin	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention immediately.
Ingestion	**Do Not Induce Vomiting!** Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention immediately.

5. FIRE-FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media	Product is not flammable. Use water spray, alcohol-resistance foam, dry chemical, or carbon dioxide. Use appropriate media for adjacent fire. Cool containers with water.
Special protective equipment and precautions for firefighters	Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.
Specific hazards arising from the chemical	Emits toxic fumes (nitrogen oxides, chromium oxides) under fire conditions. (See also Stability and Reactivity section)

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	See section 8 for recommendations on the use of personal protective equipment.
Environmental precautions	Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements.
Methods and materials for containment and cleaning up	Pick up and arrange disposal without creating dust. Sweep up and place in suitable, closed containers for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations.

7. HANDLING AND STORAGE

Precautions for safe handling
See section 8 for recommendations on the use of personal protective equipment. Avoid dust formation. Avoid breathing dust. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use.

Conditions for safe storage, including any incompatibilities
Store in cool, dry well ventilated area. Keep away from incompatible materials (see section 10 for incompatibilities). Do not grind or subject to friction or shock. Isolated storage is recommended.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls:

Component	Exposure Limits	Basis	Entity
Ammonium Dichromate	0.1 mg/m^3	CEIL	OSHA

	0.001 mg/ m^3	REL	NIOSH
	0.05 mg/m^3	PEL	ACGIH

TWA: Time Weighted Average over 8 hours of work.
TLV: Threshold Limit Value over 8 hours of work.
REL: Recommended Exposure Limit
PEL: Permissible Exposure Limit
STEL: Short Term Exposure Limit during x minutes.
IDLH: Immediately Dangerous to Life or Health
WEEL: Workplace Environmental Exposure Levels
CEIL: Ceiling

Personal Protection

Eyes	Wear chemical safety glasses or goggles, and face shield.
Inhalation	Provide local exhaust, preferably mechanical. Use an approved respirator.
Skin	Wear nitrile or rubber gloves, and complete body suit. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Other	Not Available

Other Recommendations
Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	Bright orange to red crystalline solid.
Odor	Odorless.
Odor threshold	Not Available
pH	3.0 - 4.0 at 50 g/Ll at 25°C (77°F)
Melting point/freezing point	170°C (338°F)
Initial boiling point and boiling range	Not Available
Flash point	Not Available
Evaporation rate	Not Available
Flammability (solid, gas)	Not Available
Upper/lower flammability or explosive limit	Not Explosive
Vapor pressure	Not Available
Vapor density	8.7
Relative density	2.15 g/cm^3
Solubility (ies)	Soluble in water and alcohol.
Partition coefficient: n-octanol/water	Not Available
Auto-ignition temperature	Not Available
Decomposition temperature	Not Available

10. STABILITY AND REACTIVITY

Chemical Stability	Stable
Possibility of Hazardous Reactions	Will not occur.
Conditions to Avoid	Excess heat.
Incompatible Materials	Strong reducing reagents, alcohols, strong acids.
Hazardous Decomposition Products	Nitrogen oxides, chromium oxides.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Skin	Not Available
Eyes	Not Available
Respiratory	LC50 Inhalation – rat – 160 ppm – 4 hr
Ingestion	LD50 Oral – rat – 53 mg/kg

Carcinogenicity

IARC	1-Group 1: Carcinogenic to humans (ammonium dichromate).
ACGIH	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP	Known to be human carcinogen (ammonium dichromate).
OSHA	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs & Symptoms of Exposure

Skin	Irritation, redness, itchiness, rash, blisters, deep ulcers.
Eyes	Irritation, redness, itchiness, burning.
Respiratory	Coughing, irritation, pain, nose bleeds, chest tightness, shortness of breath.
Ingestion	Epigastric pain, nausea, vomiting, diarrhea, vertigo.

Chronic Toxicity	Damage to organs. Known to cause cancer.
Teratogenicity	May cause congenital malformation in the fetus. Presumed human reproductive toxicant.
Mutagenicity	May alter genetic material. In vivo tests showed mutagenic effects.
Embryotoxicity	Not Available
Specific Target Organ Toxicity	Causes damage to organs through prolonged or repeated exposure.
Reproductive Toxicity	May cause reproductive disorders.
Respiratory/Skin Sensitization	May cause allergic respiratory and skin reactions.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Aquatic Vertebrate	LC50 – Leuciscus idus – 50 mg/L – 48 hr
Aquatic Invertebrate	Not Available
Terrestrial	Not Available

Persistence and Degradability	Not Available
Bioaccumulative Potential	Not Available
Mobility in Soil	Not Available
PBT and vPvB Assessment	Not Available
Other Adverse Effects	Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

Waste Residues	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product or residues.
Product Containers	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product containers.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

14. TRANSPORTATION INFORMATION

US DOT	UN1439, Ammonium dichromate, 5.1, pg II
TDG	UN1439, AMMONIUM DICHROMATE, 5.1, pg II
IMDG	UN1439, AMMONIUM DICHROMATE, 5.1, pg II
Marine Pollutant	No
IATA/ICAO	UN1439, Ammonium dichromate, 5.1, pg II

15. REGULATORY INFORMATION

TSCA Inventory Status	All ingredients are listed on the TSCA inventory.
DSCL (EEC)	All ingredients are listed on the DSCL inventory.
California Proposition 65	Listed: Ammonium Dichromate
SARA 302	Not Listed
SARA 304	Not Listed
SARA 311	Reactivity Hazard, Acute Health Hazard, Chronic Health Hazard
SARA 312	Reactivity Hazard, Acute Health Hazard, Chronic Health Hazard
SARA 313	Listed: Ammonium Dichromate
WHMIS Canada	Class C: Oxidizing material. Class D-1A: Material causing immediate and serious toxic effects (VERY TOXIC). Class D-2A: Material causing other toxic effects (VERY TOXIC).

16. OTHER INFORMATION

Revision	Date
Revision 1	01/02/2012
Revision 2	06/20/2013