MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MATHESON TRI-GAS, INC.
150 Allen Road Suite 302
Basking Ridge, New Jersey 07920
Information: 1-800-416-2505

Emergency Contact:
CHEMTREC 1-800-424-9300
Calls Originating Outside the US:
703-527-3887 (Collect Calls Accepted)

SUBSTANCE: SODIUM DICHROMATE

TRADE NAMES/SYNONYMS:
CHROMIC ACID (H2CR2O7), DISODIUM SALT; DICHROMIC ACID (H2CR2O7), DISODIUM SALT; CHROMIUM SODIUM OXIDE (CR3NA2O7); DISODIUM DICHROMATE; SODIUM CHROMATE (NA2CR2O7); SODIUM DICHROMATE (NA2CR2O7); SODIUM DICHROMATE(VI); SODIUM CHROMATE; SODIUM BICHROMATE; Cr2Na2O7; MAT21190; RTECS HX7700000

CHEMICAL FAMILY: inorganic, salt

CREATION DATE: Jan 24 1989
REVISION DATE: Mar 06 2009

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: SODIUM DICHROMATE
CAS NUMBER: 10588-01-9
PERCENTAGE: 100.0

3. HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=3 FIRE=0 REACTIVITY=0

EMERGENCY OVERVIEW:
COLOR: orange or red
ODOR: odorless
MAJOR HEALTH HAZARDS: potentially fatal if swallowed, harmful on contact with the skin, respiratory tract burns, skin burns, eye burns, mucous membrane burns, allergic reactions, cancer hazard (in humans)
PHYSICAL HAZARDS: May ignite combustibles.

POTENTIAL HEALTH EFFECTS:

INHALATION:
SHORT TERM EXPOSURE: irritation (possibly severe), allergic reactions, loss of voice, chest pain, difficulty breathing, headache, dizziness, lung congestion, kidney damage
LONG TERM EXPOSURE: lack of sense of smell, lack of sense of smell and taste, tooth decay, digestive disorders, asthma, lung damage, liver damage, cancer
SKIN CONTACT:
SHORT TERM EXPOSURE: irritation (possibly severe), allergic reactions, nausea, vomiting, kidney damage, coma
LONG TERM EXPOSURE: same as effects reported in short term exposure
EYE CONTACT:
SHORT TERM EXPOSURE: burns, eye damage
LONG TERM EXPOSURE: tearing, red bands around the cornea
INGESTION:
SHORT TERM EXPOSURE: allergic reactions, burns, vomiting, digestive disorders, dizziness, kidney damage, liver damage, convulsions, coma, death
LONG TERM EXPOSURE: same as effects reported in short term exposure

4. FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

SKIN CONTACT: Remove contaminated clothing, jewelry, and shoes immediately. Wash affected area with soap or mild detergent and large amounts of water until no evidence of chemical remains (approximately 15-20 minutes).

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

INGESTION: If vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately.

ANTIDOTE: dimercaprol, intramuscular.

NOTE TO PHYSICIAN: For inhalation, consider oxygen. For skin contact, consider sodium hyposulfite scrub, calcium disodium edetate ointment, ascorbic acid solution, aluminum acetate wet dressing. For ingestion, consider gastric lavage. Consider oxygen.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Negligible fire hazard. Oxidizer. May ignite or explode on contact with combustible materials.

EXTINGUISHING MEDIA: water

Do not use dry chemicals, carbon dioxide or halogenated extinguishing agents. Large fires: Flood with water. Apply water from a protected location or from a safe distance.

FIRE FIGHTING: Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Flood with water. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Avoid inhalation of material or combustion by-products. Evacuate if fire gets out of control or containers are directly exposed to fire. Evacuation radius: 800 meters (1/2 mile).

6. ACCIDENTAL RELEASE MEASURES

WATER RELEASE:
Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Keep out of water supplies and sewers.

OCCUPATIONAL RELEASE:
Avoid contact with combustible materials. Do not touch spilled material. Small dry spills: Move containers away from spill to a safe area. Small liquid spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Large spills: Dike for later disposal. Keep unnecessary people away, isolate hazard area and deny entry. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

7. HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. NFPA 430 Code for the Storage of Liquid and Solid Oxidizing Materials. Protect from physical damage. Store in a cool, dry place. Keep separated from incompatible substances. Avoid storage on wooden floors. Collect spilled material in appropriate container for disposal. Do not return to original containers. Keep separated from incompatible substances.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:
SODIUM DICHROMATE:
CHROMATES (soluble compounds):
0.1 mg(CrO3)/m3 OSHA ceiling (applies to operations/sectors for which the Hexavalent Chromium

29CFR1910.1026 is stayed)
2.5 ug(Cr(VI))/m3 OSHA action level 8 hour(s)
5 ug(Cr(VI))/m3 OSHA PEL 8 hour(s)
0.05 mg(Cr(VI))/m3 ACGIH TWA
0.001 mg(Cr(VI))/m3 NIOSH recommended TWA 10 hour(s)

VENTILATION: Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Wear appropriate chemical resistant gloves.

RESPIRATOR: The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.
OSHA Standard:
Respirator selection should comply with 29 CFR 1910.134, 29 CFR 1910.1026, and the final rule published in the Federal Register on August 24, 2006.
NIOSH Recommendations:
Measurement Element:
Chromium (Cr)
At any detectable concentration -
Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.
Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.
Escape -
Any air-purifying, full-facepiece respirator equipped with an N100, R100, or P100 filter.
Any appropriate escape-type, self-contained breathing apparatus.
For Unknown Concentrations or Immediately Dangerous to Life or Health -
Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.
Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: solid
COLOR: orange or red
ODOR: odorless
MOLECULAR WEIGHT: 261.90

MOLECULAR FORMULA: NA2-(O-CR-O2-O-CR-O2-O)
BOILING POINT: 752 F (400 C)
MELTING POINT: 675 F (357 C)
DECOMPOSITION POINT: 752 F (400 C)
VAPOR PRESSURE: Not applicable
VAPOR DENSITY (air=1): 10
SPECIFIC GRAVITY (water=1): 2.348 @ 25 C
WATER SOLUBILITY: soluble
PH: 4.0 (1% solution)
VOLATILITY: Not applicable
ODOR THRESHOLD: Not available
EVAPORATION RATE: Not applicable
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

10. STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Avoid contact with combustible materials. May ignite or explode on contact with combustible materials. Keep out of water supplies and sewers.

INCOMPATIBILITIES: combustible materials, reducing agents, amines

HAZARDOUS DECOMPOSITION:
Thermal decomposition products: chromium compounds

POLYMERIZATION: Will not polymerize.

11. TOXICOLOGICAL INFORMATION

SODIUM DICHROMATE:
TOXICITY DATA: 338 mg/kg skin-guinea pig LD50 (Dow); 50 mg/kg oral-rat LD50
CARCINOGEN STATUS: NTP: Known Human Carcinogen; IARC: Human Sufficient Evidence, Animal Limited Evidence, Group 1 (Hexavalent chromium compounds); ACGIH: A1 -Confirmed Human Carcinogen (Hexavalent chromium compounds); EC: Category 2
LOCAL EFFECTS:
Corrosive: inhalation, skin, eye, ingestion
ACUTE TOXICITY LEVEL:
Highly Toxic: ingestion
Toxic: dermal absorption
TARGET ORGANS: immune system (sensitizer), kidneys
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: blood system disorders, heart or cardiovascular disorders, liver disorders, respiratory disorders, skin disorders and allergies
TUMORIGENIC DATA: Available.

MUTAGENIC DATA: Available.
REPRODUCTIVE EFFECTS DATA: Available.
ADDITIONAL DATA: May be excreted in breast milk.

12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA:
FISH TOXICITY: 10000 ug/L 96 hour(s) LC50 (Mortality) Mosquitofish (Gambusia affinis)

INVERTEBRATE TOXICITY: 0.8-3.2 ug/L 7 hour(s) MATC (Reproduction) Water flea (Ceriodaphnia dubia)

ALGAL TOXICITY: 4 ug/L 8 hour(s) (Population Growth) Blue-green algae (Anacystis aeruginosa)

FATE AND TRANSPORT:
BIOCONCENTRATION: 956 ug/L 12 week(s) BCFD (Residue) Common bay mussel,blue mussel (Mytilus edulis) 5.05 ug/L

ENVIRONMENTAL SUMMARY: Toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001. Hazardous Waste Number(s): D007. Dispose of in accordance with U.S. EPA 40 CFR 262 for concentrations at or above the Regulatory level. Regulatory level- 5.0 mg/L.

14. TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:
PROPER SHIPPING NAME: Toxic solid, corrosive, inorganic, n.o.s. (SODIUM DICHROMATE)
ID NUMBER: UN3290
HAZARD CLASS OR DIVISION: 6.1
PACKING GROUP: II
LABELING REQUIREMENTS: 6.1; 8

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:
SHIPPING NAME: Toxic solid, corrosive, inorganic, n.o.s. (SODIUM DICHROMATE)
UN NUMBER: UN3290
CLASS: 6.1; 8
PACKING GROUP/CATEGORY: II

15. REGULATORY INFORMATION

U.S. REGULATIONS:
CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):
SODIUM DICHROMATE: 10 LBS RQ

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart B): Not regulated.

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart C): Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370 Subparts B and C):
ACUTE: Yes
CHRONIC: Yes
FIRE: Yes
REACTIVE: No
SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65):
Chromium Compounds

OSHA PROCESS SAFETY (29 CFR 1910.119): Not regulated.

STATE REGULATIONS:
California Proposition 65:
Known to the state of California to cause the following:
Hexavalent Chromium Compounds
Cancer (Feb 27, 1987)
Developmental toxicity (Dec 19, 2008)
Male reproductive toxicity (Dec 19, 2008)
Female reproductive toxicity (Dec 19, 2008)

CANADIAN REGULATIONS:
WHMIS CLASSIFICATION: Not determined.

NATIONAL INVENTORY STATUS:
U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION:
SODIUM DICHROMATE (applies only if can be used for water treatment)
CAS NUMBER: 10588-01-9
SECTION 6

CANADA INVENTORY (DSL/NDSL): Not determined.

16. OTHER INFORMATION

MSDS SUMMARY OF CHANGES
15. REGULATORY INFORMATION

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