

Material Safety Data Sheet

Product Trade Name: **DIVERCOAT 1100**

ID: H938

*** Section 1 - Chemical Product and Company Identification ***

Product Trade Name: DIVERCOAT 1100

Manufacturer Information

Heatbath Corporation

P.O. Box 51048

Indian Orchard, MA 01151-5048

Contact Phone: (413) 452-2000

8:00 AM-5:00PM

CHEMTREC Emergency Phone: (800) 424-9300

24 Hours

*** Section 2 - Composition / Information on Ingredients ***

CAS #	Component	Percent
001333-82-0	Chromic acid	1-10
007664-39-3	Hydrofluoric acid	1-10
010377-66-9	Manganese Nitrate	1-10
007697-37-2	Nitric acid	1-10
010588-01-9	Sodium bichromate	1-10
013472-45-2	Sodium tungstate	1-10

Additional Information:

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

*** Section 3 - Hazards Identification ***

Emergency Overview:

DANGER -- CORROSIVE! Contact with this material will cause burns to the skin, eyes and mucous membranes. May cause blindness. Contact with broken skin may result in ulcers. Prolonged or repeated breathing may cause ulceration of nasal membranes. Harmful or fatal if swallowed, causes kidney & liver damage. Possible chronic hazards include: cancer, fluorosis, central nervous system disorders similar to Parkinson's.

Eye Contact:

This product is severely irritating to the eyes and may cause irreversible damage including burns and blindness.

Skin Contact:

Corrosive to the skin. Contact with the skin or mucous membranes may cause severe irritation and burns. Contact with broken skin may lead to formation of firmly marginated "chrome sores". Product contains chromium, which may cause an allergic skin sensitization reaction. Following skin exposure to this product, the sensation of irritation or pain may be delayed.

Skin Absorption:

Hydrofluoric acid will penetrate the skin and attack underlying tissue and bone. Large burns (over 25 square inches) may also cause hypocalcaemia and other systemic effects which may be fatal.

Ingestion:

This product may produce corrosive damage to the gastrointestinal tract if it is swallowed. Ingestion of small amounts of this product may result in potentially fatal hypocalcaemia and systemic toxicity. Ingestion of large amounts of this product may result in fluoride poisoning including symptoms of calcification of the ligaments and severe bone changes making normal movements painful, mottling of the teeth, pulmonary fibrosis, anemia, anorexia, dental effects, and possibly death. Swallowing this product may cause methemoglobinemia characterized by a reduction in oxygen carrying capacity of the blood with symptoms including headache, dizziness, flushed face, fatigue, nausea, vomiting, drowsiness, stupor, tremors, uneven heart action, coma and rarely death.

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Inhalation:

Inhalation of mists of this product may cause severe irritation and burns to the respiratory tract. Nasal itch and soreness, perforation of the nasal septum, dental erosion, chronic asthmatic bronchitis and fluorosis may result from repeated exposure.

Medical Conditions Aggravated by Exposure:

Pre-existing eye, skin and respiratory disorders, cardiovascular bone marrow or blood system diseases, and liver and kidney disorders may be aggravated by exposure to this product.

* * * Section 4 - First Aid Measures * * *

Eye Contact:

In case of contact with the eyes, rinse immediately with plenty of water for 15 minutes, and seek immediate medical attention.

Skin Contact:

Immediately take off all contaminated clothing. For skin contact, flush with large amounts of water. Seek immediate medical attention. If irritation persists, repeat flushing and get medical attention. Discard any shoes or clothing items that cannot be decontaminated.

Ingestion:

If the material is swallowed, get immediate medical attention or advice -- Do not induce vomiting. Give one to two glasses of water or milk. Never give anything by mouth to a victim who is unconscious or is having convulsions.

Inhalation:

If mist or vapor of this product is inhaled, remove person immediately to fresh air. Seek medical attention if symptoms develop or persist.

First Aid: Notes to Physician

Ocular exposure to corrosive fluoride compounds has been treated with isotonic sodium chloride or magnesium chloride. Dermal exposure to corrosive fluoride compounds has been treated with calcium gluconate or calcium carbonate gel applied topically to the affected areas to relieve pain at the site of exposure. Treatment of hypocalcaemia associated with corrosive fluoride compounds exposure may be corrected by intravenous calcium gluconate or calcium chloride. Treatment of hypomagnesaemia may be corrected by intravenous magnesium sulfate. If cyanosis is severe, intravenous injection of methylene blue, 1 mg/kg body weight, may be of value.

* * * Section 5 - Fire Fighting Measures * * *

Flash Point:	None	Upper Flammable Limit (UFL):	Not applicable
Flammability Classification:	Nonflammable	Lower Flammable Limit (LFL):	Not applicable

Fire & Explosion Hazards:

None expected. If evaporated to dryness, solid residue is an oxidizing agent and may cause spontaneous ignition of combustible materials.

Decomposition Products:

Irritating and toxic gases or fumes may be released during a fire.

Extinguishing Media:

Use any media suitable for the surrounding fires.

Fire-Fighting Instructions:

Firefighters should wear full protective clothing including self-contained breathing apparatus.

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*** Section 6 - Accidental Release Measures ***

Containment and Clean up procedures must be conducted in accordance with all local, state, and federal regulations.

Containment Procedures:

Stop the flow of material, if this can be done without risk. Wear appropriate protective equipment and clothing during clean up.

Clean-Up Procedures:

Absorb spill with inert material. Neutralize with soda ash or lime. Shovel material into appropriate container for disposal. Treat spill area for hexavalent chrome. Dispose of collected material according to local, state, and federal regulations

*** Section 7 - Handling and Storage ***

Handling Procedures:

Do not get this material in your eyes, on your skin, or on your clothing. Wash thoroughly after handling. Do not inhale vapors or mists of this product. Clothing or other material wet with this product and allowed to dry may become flammable. This product is for industrial use only.

Storage Procedures:

Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials. Thaw and mix thoroughly if frozen.

*** Section 8 - Exposure Controls / Personal Protection ***

Exposure Guidelines:

A: General Product Information

Follow all applicable exposure limits.

B: Component Exposure Limits

Chromic acid (1333-82-0)

ACGIH: 0.05 mg (Cr) /m3 TWA

OSHA: 0.005 mg Cr(VI) /m3 TWA

NIOSH: 0.001 mg Cr(VI) /m3 TWA; NIOSH Potential Occupational Carcinogen - see Appendix A; see Appendix C for supplementary exposure limits

Hydrogen fluoride as F (007664-39-3)

ACGIH: 3 ppm C

OSHA: 3 ppm TWA, 6 ppm STEL

NIOSH: 3 ppm TWA; 2.5 mg/m3 TWA; 6 ppm C; 5 mg/m3 (15 min) C

Manganese Nitrate (10377-66-9)

ACGIH: 0.2 mg (Mn) /m3 TWA

OSHA: 5.0 mg (Mn) /m3 TWA

NIOSH: 5.0 mg (Mn) /m3 TWA;

Nitric acid (007697-37-2)

ACGIH: 2 ppm TWA; 5.2 mg/m3 TWA; 4 ppm STEL; 10 mg/m3 STEL

OSHA: 2 ppm TWA; 5 mg/m3 TWA; 4 ppm STEL; 10 mg/m3 STEL

NIOSH: 2 ppm TWA; 5 mg/m3 TWA; 4 ppm STEL; 10 mg/m3 STEL

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Sodium bichromate (10588-01-9)

ACGIH: 0.05 mg (Cr) /m3 TWA

OSHA: 0.005 mg Cr(VI) /m3 TWA

NIOSH: 0.001 mg Cr(VI) /m3 TWA; NIOSH Potential Occupational Carcinogen - see Appendix A; see Appendix C for supplementary exposure limits

Engineering Controls:

Ventilation should effectively remove and prevent buildup of any vapor or mist generated from the handling of this product.

PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face Protective Equipment:

Wear chemical goggles; face shield (if splashing is possible).

Skin Protection:

Use impervious gloves. Gloves should be tested to determine suitability for prolonged contact. Use of impervious apron and boots are recommended.

Respiratory Protection:

If ventilation is not sufficient to effectively prevent buildup of aerosols or vapors, appropriate NIOSH/MSHA respiratory protection must be provided.

Personal Protective Equipment:

Eyewash fountains and emergency showers are required.

***** Section 9 - Physical & Chemical Properties *****

Physical State: Liquid	Appearance: Red
Odor: Sharp acid	Vapor Pressure: Not applicable
Vapor Density: Not applicable	Boiling Point: >212 °F (>100°C)
Freezing Point: Not determined	Specific Gravity: 1.140 @ 25°C (77°F)
pH: 1.6-2.0	Viscosity: Not determined
VOC: Not applicable	Solubility Water: Complete
Evaporation Rate: Not applicable	Percent Volatile: Not applicable
Percent Solids: 19%	

***** Section 10 - Chemical Stability & Reactivity Information *****

Chemical Stability:

Stable under normal conditions.

Conditions to Avoid:

None expected.

Incompatibility:

Avoid contact with organic materials, oils, greases, and any oxidizable materials. This product may react with strong alkali's.

Decomposition Products:

Hydrogen fluoride, chromium oxides, nitrogen oxides.

Hazardous Polymerization:

Will not occur.

***** Section 11 - Toxicological Information *****

Acute Toxicity:

A: General Product Information

No information available for the product.

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B: Component Analysis - LD50/LC50

Chromic Acid (1333-82-0)

Oral LD50 Rat : 52 mg/kg

Oral LD50 Rabbit: 57 mg/kg

Inhalation LC50 Rat: 217 mg/kg

Nitric acid (007697-37-2)

Inhalation LC50 Rat: 67 ppm (NO₂)/4H

Sodium bichromate (010588-01-9)

Oral LD50 Rat: 50 mg/kg

Carcinogenicity:

A: General Product Information

No information available for the product.

B: Component Carcinogenicity

Chromic acid (1333-82-0)

IARC: Group 3 (not classifiable) – related to “Chrome and chrome compounds”

NTP: “Chrome and chrome compounds” – known carcinogen

OSHA: “Chrome and chrome compounds” – known carcinogen

ACGIH: A4 – not classifiable as a human carcinogen (see exposure limits)

NIOSH: “Chrome, inorganic” - occupational human carcinogen

Sodium bichromate (10588-01-9)

ACGIH: A1-confirmed human carcinogen (related to Chromium (VI) compounds- water soluble)

NTP: Known Carcinogen; (under Chromium and Certain Chromium Compounds) (Select Carcinogen)

IARC: Monograph 49; 1990 (Chromium (VI) compounds; evaluated as a group) (related to Chromium (VI))
(Group 1 (carcinogenic to humans))

Chronic Toxicity

No information available for the product. Chromium III, the naturally occurring form, has low toxicity while chromium VI is highly toxic due to strong oxidation characteristics and permeability through biological membranes. Excessive exposure to chromium VI can produce allergic skin sensitization reactions and severe nasal irritation, scarring and damage to the lungs, liver and kidney damage.

Chronic exposure to fluoride compounds may result in fluorosis characterized by calcification of ligaments and severe bone changes, which result in painful movements, mottling of the teeth, pulmonary fibrosis, anemia, anorexia, and weight loss.

Epidemiology: No information available for the product.

Neurotoxicity: No information available for the product.

Mutagenicity: No information available for the product.

Teratogenicity: No information available for the product.

Other Toxicological Information: None available.

* * * Section 12 - Ecological Information * * *

Ecotoxicity:

A: General Product Information

No data available for this product. Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.

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B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Chromic acid (CrO3) (001333-82-0)

Test & Species		Conditions
LC50 (96 hr) fathead minnow	36.2 mg/L.	
LC50 (96 hr) striped catfish	200 mg/L. (related to Chromium (VI))	

Sodium bichromate (010588-01-9)

Test & Species		Conditions
LC50 (96 hr) fathead minnow	33.2 mg/L.	Flow-through, 235 mg/L CaCO3.
LC50 (96 hr) rainbow trout	69 mg/L.	Flow-through, 45 mg/L CaCO3.
LC50 (96 hr) bluegill	213 mg/L.	Static, 120 mg/L CaCO3.

Environmental Fate:

No data is available concerning the environmental fate, biodegradation or bioconcentration for this product.

*** Section 13 - Disposal Considerations ***

Wastes must be tested using methods described in 40 CFR Part 261. It is the generator's responsibly to determine if the waste meets applicable definitions of hazardous wastes. State and local regulations may differ from Federal disposal regulations. Dispose of waste material according to Local, State, Federal and Provincial Environmental Regulations.

*** Section 14 - Transportation Information ***

US DOT Information

Proper Shipping Name	Corrosive Liquid, Toxic, N.O.S. (contains Chromic Acid, Sodium Bichromate, and Nitric Acid)
Hazard Class	8
UN / NA Number	UN2922
Packing Group	II
Product RQ (lb)	125 (Chromic Acid)

*** Section 15 - Regulatory Information ***

US Federal Regulations

A: General Product Information

No additional information available.

B: Component Analysis

This material contains one or more of the following chemicals, requiring identification under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Chromic acid (1333-82-0)

SARA 313: form R reporting required for Chromium(VI) =0.1%; Chromium(III) =1.0 % de minimis concentration
CERCLA: Final RQ = 10 pounds (4.54 kg)

Hydrogen fluoride (007664-39-3)

SARA 302: TPQ = 100 pounds; RQ = 100 pounds
SARA 313: form R reporting required for 1.0% de minimis concentration
CERCLA: final RQ = 100 pounds (45.4 kg)

Manganese Compounds (007439-96-5)

SARA 313: Form R reporting required for 1.0% de minimis concentration
CERCLA: Statutory RQ = 1pound (0.454 kg); no final RQ is being assigned to the generic or broad class

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Nitric acid (007697-37-2)

SARA 302: TPQ = 1000 pounds; RQ = 1000 pounds
 SARA 313: Form R reporting required for 1.0% de minimis concentration
 CERCLA: Final RQ = 1000 pounds (454 kg)

Sodium bichromate (10588-01-9)

SARA 313: form R reporting required for Chromium(VI) =0.1%; Chromium(III) =1.0 % de minimis concentration
 CERCLA: Final RQ = 10 pounds (4.54 kg)

SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No Reactive: No

State Regulations

A: General Product Information

No additional information available.

B: Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS #	CA	FL	MA	MN	NJ	PA
Chromic acid	001333-82-0	Yes	Yes	Yes	Yes	Yes	Yes
Nitric acid	007697-37-2	Yes	Yes	Yes	Yes	Yes	Yes
Sodium bichromate	010588-01-9	Yes	Yes	Yes	Yes	Yes	Yes

Other Regulations

A: General Product Information

All components are on the U.S. EPA TSCA Inventory List.

B: Component Analysis – Inventory

Component	CAS #	TSCA	DSL	EINECS
Chromic acid	001333-82-0	Yes	Yes	Yes
Hydrofluoric acid	007664-39-3	Yes	Yes	Yes
Manganese Nitrate	010377-66-9	Yes	Yes	Yes
Nitric acid	007697-37-2	Yes	Yes	Yes
Sodium bichromate	010588-01-9	Yes	Yes	Yes
Sodium tungstate	013472-45-2	Yes	Yes	Yes

***** Section 16 - Other Information *****

NFPA Ratings: Health: 3 Fire: 0 Reactivity: 1 Other:
 Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

HMIS Ratings: Health: 3* Fire: 0 Reactivity: 1 Personal Protection:
 Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

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MSDS Change History:

3/18/02: Rev.02; MSDS as issued by Chemtech Finishing Systems.
1/18/05: Chemtech Finishing Systems acquired by Heatbath Corporation.
5/25/05: Rev.03; Chemtech MSDS issued under new manufacturer: Heatbath Corporation.
Sec.1 - Manufacturer Information Updated
Sec.14 - DOT Description Updated
Sec.16 - MSDS Change History section added
1/09/07: Rev.04; Update of hazardous ingredient disclosure (Sec. 2, 3, 8, 11, 15)
Chromic Acid and Sodium Bichromate related information updated (Sec. 2, 3, 6, 8, 11, 15)

Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists	NFPA = National Fire Protection Association
CERCLA = Comprehensive Environmental Response, Compensation and Liability Act	NIOSH = National Institute for Occupational Safety and Health
EPA = Environmental Protection Agency	NTP = National Toxicology Program
HMIS = Hazardous Material Identification System	OSHA = Occupational Safety and Health Administration
IARC = International Agency for Research on Cancer	SARA = Superfund Amendments and Reauthorization Act
MSHA = Mine Safety and Health Administration	TSCA = Toxic Substance Control Act

The information presented herein is believed to be factual as it has been derived from the works and opinions of persons believed to be qualified experts; however, nothing contained in this information is to be taken as a warranty or representation for which Heatbath Corporation bears legal responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.

This is the end of MSDS for DIVERCOAT 1100.