

Material Safety Data Sheet

Version 1.2
Revision Date 06/14/2006

MSDS Number 300000007424
Print Date 06/08/2007

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Chrome Etch

Product Use Description : General Industrial

Company : Air Products and Chemicals, Inc
7201 Hamilton Blvd.
Allentown, PA 18195-1501

Telephone : 1-800-345-3148 Chemicals
1-800-752-1597 Gases and Electronic Chemicals

Emergency telephone number : 800-523-9374 USA
01-610-481-7711 International

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Concentration (Weight)
Cerate(2-), hexakis(nitrato-kO)-, diammonium, (OC-6-11)-	16774-21-3	10% - 20 %
Nitric acid	7697-37-2	5% - 10 %

3. HAZARDS IDENTIFICATION

Emergency Overview

Corrosive.
Irritating to eyes.
Severe respiratory irritant.
Moderate skin irritant.
Harmful by inhalation.

Potential Health Effects

Inhalation : Can cause severe eye, skin and respiratory tract burns. Risk of serious damage to the lungs (by inhalation). May cause nose, throat, and lung irritation. Inhalation of aerosol may cause irritation to the upper respiratory tract. Inhalation of vapors and/or aerosols in high concentration may cause irritation of respiratory system. Very toxic by inhalation of spray mist and/or aerosols. Industrial chemicals such as this material with acute aerosol toxicity values as shown in Section 11 would not be classified as toxic by inhalation according to US domestic and international transport regulations. Harmful if inhaled.

Eye contact : Causes eye burns. May cause blindness. Contact with eyes may cause irritation.

Skin contact : Causes skin burns. Causes skin irritation.

Ingestion : If ingested, severe burns of the mouth and throat, as well as a danger of

Material Safety Data Sheet

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Revision Date 06/14/2006

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perforation of the oesophagus and the stomach.

Exposure Guidelines

- Target Organs : Skin.
Eyes.
Respiratory system.
Lungs.
- Symptoms : Repeated and/or prolonged exposure to low concentrations of vapors and/or aerosols may cause: Sore throat.

Aggravated Medical Condition

Eye disease Skin disorders and Allergies. Asthma.

4. FIRST AID MEASURES

- General advice : Seek medical advice. If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately.
- Eye contact : Hold eyelids apart, initiate and maintain gentle and continuous irrigation until the patient receives medical care. If medical care is not promptly available, continue to irrigate for one hour. Rinse immediately with plenty of water also under the eyelids for at least 20 minutes.
- Skin contact : Immediately remove contaminated clothing, and any extraneous chemical, if possible to do so without delay. Initiate and maintain gentle and continuous irrigation until the patient receives medical care. If medical care is not promptly available, continue to irrigate for one hour. Cover wound with sterile dressing.
- Ingestion : If a person vomits when lying on his back, place him in the recovery position. Never give anything by mouth to an unconscious person. Prevent aspiration of vomit. Turn victim's head to the side.
- Inhalation : If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately. Move to fresh air.

5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Alcohol-resistant foam.
The product itself does not burn.
Carbon dioxide (CO₂).
Dry chemical.
Dry sand.
Limestone powder.
- Specific hazards : Incomplete combustion may form carbon monoxide. Downwind personnel must be evacuated.

Material Safety Data Sheet

Version 1.2
Revision Date 06/14/2006

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- Special protective equipment for fire-fighters : Avoid contact with the skin. A face shield should be worn. Use personal protective equipment. Wear self contained breathing apparatus for fire fighting if necessary.
- Further information : The product, as distributed, is noncombustible., Do not allow run-off from fire fighting to enter drains or water courses., Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : Wear suitable protective clothing, gloves and eye/face protection. Use self-contained breathing apparatus and chemically protective clothing. Evacuate personnel to safe areas.
- Environmental precautions : Construct a dike to prevent spreading.
- Methods for cleaning up : Contact Air Products' Emergency Response Center for advice. Approach suspected leak areas with caution. Neutralize with a dilute solution of sodium carbonate. Place in appropriate chemical waste container.
- Additional advice : Open enclosed spaces to outside atmosphere. Evacuate area and do not approach spilled product. If possible, stop flow of product.

7. HANDLING AND STORAGE

Handling

Use only in well-ventilated areas. Avoid breathing vapors and/or aerosols. Avoid contact with skin and eyes. Emergency showers and eye wash stations should be readily accessible. Adhere to work practice rules established by government regulations. Avoid contact with eyes. Use personal protective equipment. When using, do not eat, drink or smoke.

Storage

Keep away from alkalis.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures

Provide readily accessible eye wash stations and safety showers.
Provide natural or explosion-proof ventilation adequate to ensure concentrations are kept below exposure limits.

Personal protective equipment

- Respiratory protection : Wear appropriate respirator when ventilation is inadequate.
- Hand protection : Neoprene gloves.
Impervious gloves.
The breakthrough time of the selected glove(s) must be greater than the intended use period.

Material Safety Data Sheet

Version 1.2
Revision Date 06/14/2006

MSDS Number 300000007424
Print Date 06/08/2007

Eye protection	: Full face shield with goggles underneath. Chemical resistant goggles must be worn.
Skin and body protection	: Slicker Suit. Impervious clothing. Full rubber suit (rain gear). Rubber or plastic boots. Long sleeve shirts and trousers without cuffs.
Environmental exposure controls	: Construct a dike to prevent spreading.
Special instructions for protection and hygiene	: Provide readily accessible eye wash stations and safety showers. Wash at the end of each workshift and before eating, smoking or using the toilet.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	: Liquid.
Color	: Light yellow.
Odor	: Pungent.
Relative vapor density	: 1.3 (air = 1)
Relative density	: 1.106 (water = 1)
Vapor pressure	: 17.29 mmHg
Density	: 69.045 lb/ft ³ (1.106 g/cm ³) at
pH	: 1 - 2
Boiling point/range	: > 212 °F (> 100 °C)
Water solubility	: Completely soluble.

10. STABILITY AND REACTIVITY

Stability	: Stable under normal conditions.
Conditions to avoid	: Decomposes on heating. Exposure to light.
Materials to avoid	: Amines. Incompatible with bases. Reducing agents.
Hazardous decomposition products	: Carbon monoxide. Carbon dioxide (CO ₂).

Material Safety Data Sheet

Version 1.2
Revision Date 06/14/2006

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Nitrogen oxides (NOx).
Gives off hydrogen by reaction with metals.

11. TOXICOLOGICAL INFORMATION

Acute Health Hazard

- Ingestion : No data is available on the product itself.
- Inhalation : No data is available on the product itself.
- Inhalation - Components
Nitric acid LC50 (4 h) : 310 ppm Species : Rat.
- Skin. : No data is available on the product itself.
- Eye irritation/corrosion : Eye irritation.
- Acute dermal
irritation/corrosion : Skin irritation.

12. ECOLOGICAL INFORMATION

Ecotoxicity effects

- Aquatic toxicity : No data is available on the product itself.
- Toxicity to other organisms : No data available.

Persistence and degradability

- Mobility : No data available.
- Bioaccumulation : No data is available on the product itself.

13. DISPOSAL CONSIDERATIONS

- Waste from residues / unused products : Contact supplier if guidance is required.
- Contaminated packaging : Dispose of container and unused contents in accordance with federal, state, and local requirements.

14. TRANSPORT INFORMATION

CFR

- Proper shipping name : Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid, Diammonium hexanitratocerate)
- Class : 8

Material Safety Data Sheet

Version 1.2
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UN/ID No. : UN3264
Packing group : II

IATA

Proper shipping name : Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid, Diammonium hexanitratocerate)
Class : 8
UN/ID No. : UN3264
Packing group : II

IMDG

Proper shipping name : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Nitric acid, Diammonium hexanitratocerate)
Class : 8
UN/ID No. : UN3264
Packing group : II

CTC

Proper shipping name : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Nitric acid, Diammonium hexanitratocerate)
Class : 8
UN/ID No. : UN3264
Packing group : II

15. REGULATORY INFORMATION

OSHA Hazard Communication Standard (29 CFR 1910.1200) Hazard Class(es)
Corrosive.

Country	Regulatory list	Notification
USA	TSCA	Included on Inventory.
EU	EINECS	Included on EINECS inventory or polymer substance, monomers included on EINECS inventory or no longer polymer.
Canada	DSL	Included on Inventory.
Australia	AICS	Included on Inventory.
Japan	ENCS	Not on Inventory.
South Korea	ECL	Included on Inventory.
China	SEPA	Included on Inventory.
Philippines	PICCS	Included on Inventory.

EPA SARA Title III Section 312 (40 CFR 370) Hazard Classification:
Acute Health Hazard

EPA SARA Title III Section 313 (40 CFR 372) Component(s) above 'de minimus' level:
Nitric acid

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)

This product does not contain any chemicals known to State of California to cause cancer, birth defects or any other harm.

Material Safety Data Sheet

Version 1.2
Revision Date 06/14/2006

MSDS Number 300000007424
Print Date 06/08/2007

WHMIS Hazard Classification
Toxic Material Causing Other Toxic Effects, Corrosive Material

16. OTHER INFORMATION

HMIS Rating

Health	: 3
Flammability	: 0
Physical hazard	: 0

Prepared by : Air Products and Chemicals, Inc. Global EH&S Product Safety Department

For additional information, please visit our Product Stewardship web site at
<http://www.airproducts.com/productstewardship/>
