Material Safety Data Sheet

Aluminum Oxide 150 PF-254

Section 1. Product and Company Identification

Product name : Aluminum Oxide 150 PF-254

Product code : 1064

Synonym : Alumina

Material uses : Other non-specified industry: Analytical reagent.

Manufacturer : EMD Chemicals Inc.
P.O. Box 70
480 Democrat Road
Gibbstown, NJ 08027
856-423-6300 Technical Service
Monday - Friday: 8:00 - 5:00 PM

Validation date : **5/19/2006.**

Print date : 6/22/2006.

In case of emergency : 800-424-9300 CHEMTREC (USA)
613-996-6666 CANUTEC (Canada)
24 Hours/Day: 7 Days/Week

Section 2. Hazards Identification

Physical state : Solid. (Powder.)

Odor : Odorless.

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Emergency overview : WARNING!

CAUSES DAMAGE TO THE FOLLOWING ORGANS: LUNGS, RESPIRATORY TRACT, SKIN, EYE, LENS OR CORNEA.
MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION.

MAY CAUSE LUNG DAMAGE IF INHALED IN SUFFICIENT QUANTITIES.
MAY POLYMERIZE VIOLENTLY (HEAT) WITH ETHYLENE OXIDE.

Avoid contact with skin and clothing. Avoid breathing dust. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.

Routes of entry : Inhalation. Ingestion.

Potential acute health effects

Eyes : Moderately irritating to eyes.

Skin : Moderately irritating to the skin.

Inhalation : Moderately irritating to the respiratory system.

Ingestion : No known significant effects or critical hazards.

Carcinogenic effects : No known significant effects or critical hazards.

Mutagenic effects : No known significant effects or critical hazards.

Teratogenicity / Reproductive toxicity : No known significant effects or critical hazards.

Medical conditions aggravated by over-exposure : Repeated skin exposure can produce local skin destruction or dermatitis. Repeated or prolonged exposure to the substance can produce lung damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated or prolonged exposure to the substance can produce target organs damage.

See toxicological information (section 11)

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Section 3. Composition/Information on Ingredients

United States

Name	CAS number	% by Weight
Aluminum Oxide	1344-28-1	100

Section 4. First Aid Measures

Eye contact : Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention.

Skin contact : Flush contaminated skin with plenty of water. Continue to rinse for at least 10 minutes. Get medical attention. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Inhalation : Move exposed person to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if symptoms occur. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Ingestion : Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if symptoms occur. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

Section 5. Fire Fighting Measures

Flammability of the product : No specific hazard.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Not available.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Special remarks on fire hazards : Reacts violently (flames) with chlorine trifluoride.

Section 6. Accidental Release Measures

Personal precautions : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment.

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Methods for cleaning up : If emergency personnel are unavailable, vacuum or carefully scoop up spilled material and place in an appropriate container for disposal by incineration. Avoid creating dusty conditions and prevent wind dispersal.

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Section 7. Handling and Storage

Handling : Avoid contact with eyes, skin and clothing. Keep container closed. Use only with adequate ventilation. Avoid breathing dust. Wash thoroughly after handling.

Storage : Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8. Exposure Controls/Personal Protection

Product name	Exposure limits
United States	
Aluminum Oxide	**ACGIH TLV (United States, 1/2006). Notes: 1996 Adoption Refers to Appendix A -- Carcinogens. The value is for total dust containing no asbestos and < 1% crystalline silica.** TWA: 10 mg/m^3 8 hour/hours. Form: All forms **NIOSH REL (United States, 12/2001).** TWA: 5 mg/m^3 10 hour/hours. Form: All forms **OSHA PEL (United States, 8/1997).** TWA: 5 mg/m^3 8 hour/hours. Form: Respirable fraction TWA: 15 mg/m^3 8 hour/hours. Form: Total dust **OSHA PEL 1989 (United States, 3/1989).** TWA: 10 mg/m^3 8 hour/hours. Form: Dust TWA: 5 mg/m^3 8 hour/hours. Form: Respirable fraction

Consult local authorities for acceptable exposure limits.

Engineering measures : No special ventilation requirements. Good general ventilation should be sufficient to control airborne levels. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protection

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.
Recommended: safety glasses with side-shields

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Body: Recommended: lab coat

Respiratory : Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: nitrile rubber

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 9. Physical and Chemical Properties

Physical state : Solid. (Powder.)

Color : White.

Odor : Odorless.

Molecular weight : 101.96 g/mole

Molecular formula : Al2-O3

Boiling/condensation point : 2977°C (5390.6°F)

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Section 9. Physical and Chemical Properties

Melting/freezing point : 2050°C (3722°F)

Relative density : 4 (Water = 1)

Section 10. Stability and Reactivity

Stability and reactivity : The product is stable.

Incompatibility with various substances : Reactive or incompatible with the following materials: oxidizing materials and acids. MAY POLYMERIZE VIOLENTLY (HEAT) WITH ETHYLENE OXIDE.

Hazardous polymerization : MAY POLYMERIZE VIOLENTLY (HEAT) WITH ETHYLENE OXIDE.

Conditions of reactivity : Reacts violently (flames) with chlorine trifluoride.

Section 11. Toxicological Information

Toxicity data

Chronic effects on humans : **CARCINOGENIC EFFECTS** A4 (Not classifiable for humans or animals.) by ACGIH. Causes damage to the following organs: lungs, upper respiratory tract, skin, eye, lens or cornea.

Other toxic effects on humans : Hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation (lung irritant).

Specific effects

Carcinogenic effects : No known significant effects or critical hazards.

Mutagenic effects : No known significant effects or critical hazards.

Teratogenicity / Reproductive toxicity : No known significant effects or critical hazards.

Sensitization

Ingestion : No known significant effects or critical hazards.

Inhalation : Moderately irritating to the respiratory system.

Eyes : Moderately irritating to eyes.

Skin : Moderately irritating to the skin.

Section 12. Ecological Information

Environmental precautions : No known significant effects or critical hazards.

Products of degradation : Some metallic oxides.

Toxicity of the products of biodegradation : The product itself and its products of degradation are not toxic.

Section 13. Disposal Considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

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Section 14. Transport Information

Regulatory information	UN number	Proper shipping name	Class	PG*	Label	Additional information
DOT Classification	-	CHEMICALS, N.O.S.	-	-		Not available.

PG* : Packing group

Section 15. Regulatory Information

United States

HCS Classification : Irritating material
Target organ effects

U.S. Federal regulations : TSCA 8(b) inventory: Listed

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Aluminum Oxide
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Aluminum Oxide : Immediate (acute) health hazard

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: No products were found.

Clean Air Act (CAA) 112 accidental release prevention: No products were found.

Clean Air Act (CAA) 112 regulated flammable substances: No products were found.

Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

SARA 313

	Product name	CAS number	Concentration
Form R - Reporting requirements :	Aluminum Oxide	1344-28-1	100
Supplier notification :	Aluminum Oxide	1344-28-1	100

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations : Pennsylvania RTK: Aluminum Oxide : (environmental hazard, generic environmental hazard)
Massachusetts RTK: Aluminum Oxide
New Jersey: Aluminum Oxide

Canada

WHMIS (Canada) : Not controlled under WHMIS (Canada).

CEPA DSL/CEPA NDSL : CEPA DSL: Aluminum Oxide

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

EU regulations

Risk phrases : This product is not classified according to EU legislation.

International regulations

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Section 15. Regulatory Information

International lists : Australia (NICNAS): Aluminum Oxide

China: Aluminum Oxide

Germany water class: Aluminum Oxide

Japan (METI): Aluminum Oxide

Korea (TCCL): Aluminum Oxide

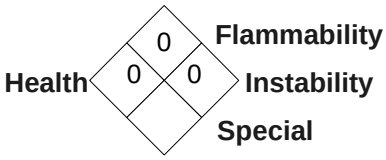
Philippines (RA6969): Aluminum Oxide

Section 16. Other Information

Label requirements : WARNING!

CAUSES DAMAGE TO THE FOLLOWING ORGANS: LUNGS, RESPIRATORY TRACT, SKIN, EYE, LENS OR CORNEA.
MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION.
MAY CAUSE LUNG DAMAGE IF INHALED IN SUFFICIENT QUANTITIES.
MAY POLYMERIZE VIOLENTLY (HEAT) WITH ETHYLENE OXIDE.

National Fire Protection Association (U.S.A.) :



Notice to reader

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