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HMIS Index: 0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe		MATERIAL SAFETY DATA SHEET EP-D6000-A12C Aqueous Dispersion		HMIS Rating: 1 - Health 0 - Flammability 0 - Reactivity B - PPE
MSDS has been prepared in accordance with ANSI standard Z400.1-1993, EC Directive 91/155/EEC and 93/112/EEC.				
SECTION I - Chemical Product and Company Identification				
Trade Name EP-D6000-A12C Aqueous Dispersion		Product Type Cerium Oxide Aqueous Dispersion	Date Prepared May 16, 2005 Date Issued May 16, 2005	Prepared By: Michael Trembley Title: Product Stewardship Mgr.
Manufacturer/Supplier Cabot Microelectronics Corporation 870 Commons Drive Aurora, IL 60504 Unites States		Cabot Microelectronics Corporation Barry Site, Sully Moors Rd. Sully, South Glamorgam CF64 Wales, UK	Cabot Microelectronics Corporation 1287-19 Oaza-Kitakoyama Geino-cho-Age-gun Mie-Ken 514-2213 Japan	
Telephone No. 630-375-5586 (U.S.) - MSDS Requests 630-375-5576 (U.S.) -Technical Information 011- 44 (0) 1446 422000 (U.K.) 011-81-59-266-0120 (Japan)		Facsimile No. 630-585-9976 (U.S.) 011- 44 (0) 1446 422001 (U.K.) 011-81-59-266-0121 (Japan)	Emergency Telephone No. Chemtrec (U.S.) 800-424-9300 Chemtrec (Intl.) 703-527-3887 Cabot Microelectronics (U.S.) 630-585-9471 011-44-1446736999 (U.K.)	
SECTION II - Composition/Information on Ingredients				
Substance Trivial Name EP-D6000-A12C Aqueous Dispersion		Formal Name Aqueous Dispersion		Chemical Family Not Applicable
Component Cerium (IV) Oxide Proprietary Ingredients De-Ionized Water	CAS No. 1306-38-3 Proprietary 7732-18-5	EINECS # 215-150-4 Proprietary 231-791-2	% by Weight <5 % < 3% > 92%	EU Classification Not classified Not classified Not classified
Trade Names and Synonyms EP-D6000-A12C Aqueous Dispersion				
Material Uses Used as a polishing slurry in the semiconductor industry and other applications.				

SECTION III - Hazards Identification

Emergency Overview:

Milky white to pale yellow slurry.

Caution: May cause skin and eye irritation. Do not breath dust from dried product.

Potential Environmental Effects: None known.

Potential Health Effects

Routes of Exposure: Eye, Skin

Eye: May cause slight irritation.

Skin: May cause slight irritation.

Ingestion: May be harmful if swallowed.

Inhalation: Due to this material's liquid dispersion state, it is not expected to be a significant inhalation hazard. Dried product may cause irritation to the respiratory tract.

Chronic Effects: No components listed as carcinogens by IARC, NTP, Z List or OSHA.

Teratology: None known.

Reproduction Info.: None known.

Target Organs: None known.

Medical Conditions Aggravated: None known.

SECTION IV - First Aid Measures

Inhalation: Remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. If symptoms develop, seek medical attention.

Ingestion: Do not induce vomiting. If conscious and alert, rinse mouth with water. If symptoms develop seek medical attention.

Eyes: Immediately flush lightly with plenty of water for at least 15 minutes. If symptoms develop seek medical attention.

Skin: Flush affected area with water. Remove contaminated clothing. If symptoms develop seek medical attention.

Advice to Physicians

Treat symptomatically if present.

SECTION V - Fire Fighting Measures

Extinguishing Media Use extinguishing media for surrounding fire.	Unsuitable Media Not Applicable	Flash Point Not Applicable	Flash Point Method Not Applicable
Lower Explosive Limit Not Applicable	Upper Explosive Limit Not Applicable	Ignition in Air Not Defined	
Flammability Classification Not Applicable		Flame Propagation in Air Not Applicable	
Fire Fighting Procedure No special fire fighting procedures.		Combustion Hazards Not Applicable	
Protective Equipment Standard personal protective equipment for structural fire fighting.		Unusual Fire Hazards None expected.	
Dust Explosion Potential Not Applicable			
Sensitivity to Impact Not Applicable		Static Discharge Effects Not Applicable	

SECTION VI - Accidental Release Measures

Personal Precautions

Safety glasses or goggles, impervious gloves and protective clothing recommended when handling. If spilled material dries, creating airborne dust concentrations that exceed the applicable exposure limit, then an approved respirator for dust/fumes is recommended.

Spill Cleanup Measures

Absorb with inert material (e.g., dry sand or earth), then place in chemical waste container. Wear appropriate PPE. See Section 8.

Environmental Precautions

Do not allow material to surface waters.

SECTION VII - Handling and Storage

Handling & Storage Precautions

Handling: Avoid skin and eye contact. Avoid generating aerosols or mists. Do not breath aerosols, mists or dust from dried product.

Storage: Keep from freezing.

Hygienic Practices

Avoid contact with skin. Wash exposed skin frequently. Good practices should be followed in regard to work clothing.

Special Precautions

None.

SECTION VIII - Exposure Controls/Personal Protection

Inhalation Standards

TLV (U.S.) = 10 mg/m³ total dust for particles not otherwise classified

PEL (U.S.) = 10 mg/m³ for nuisance dust.

MAK (Germ.) = 4 mg/m³ inhalable dust.

OES (U.K.) = 6 mg/m³ total inhalable, 2.4 mg/m³ respirable dust.

Australia (TLV) = 10 mg/m³ total dust containing no asbestos.

Eye-Face Protection

Safety glasses with side shields or goggles recommended to prevent eye contact

Skin Protection

Impervious gloves.

Protective Clothing

Wear appropriate clothing to minimize skin contact.

Respiratory Protection

None normally needed unless mists or dust are generated.

An approved air-purifying respirator (APR) for dusts/mists may be appropriate to control exposure. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air supplied respirator if there is any potential for uncontrolled release, exposure levels are not known, or any circumstances where air-purifying respirators may not provide adequate protection. Use of respirators must include a complete respiratory protection program in accordance with national standards and current best practices.

The following agencies/organizations approve respirators and/or criteria for respirator programs:

U.S.: NIOSH approval under 42 CFR 84 required.
OSHA (29 CFR 1910.134)
ANSI Z88.2-1992

EU: CR592 Guidelines for the Selection and Use of Respiratory Protection.
Germany: DIN/EN 143 Respiratory Protective Devices for Dusty Materials.

UK: BS 4275 Recommendations for the Selection, Use and Maintenance of Respiratory Protective Equipment.
HSE Guidance Note HS(G)53 Respiratory Protective Equipment.

Engineering Controls

If user operations generate dust, fumes or mist, use ventilation to keep exposure to airborne contaminants below exposure limits.

Other Protective Measures
None

SECTION IX - Physical and Chemical Properties

Physical State Slurry	Color Milky White to pale yellow	Odor None
Odor Threshold Not Applicable	pH 4 - 5	Boiling Point 100°C/212° F
Evaporation Rate Same as water	Melting/Freezing Point 0°C/32° F	% Volatile by Volume Not Applicable
Solubility in Water Dispersible	Specific Gravity Not Determined	Vapor Density Water
Vapor Pressure Water	Reid Vapor Pressure Not Applicable	Water/Oil Distribution Not Applicable
Viscosity Not Determined	Pour Point Not Applicable	

SECTION X - Stability and Reactivity

Chemical Stability Stable	Conditions to Avoid Freezing conditions	Incompatible Materials None
Reactivity Stable	Hazardous Decomposition Nitrogen oxides, CO, CO ₂ gases	Hazardous Polymerization Will not occur

SECTION XI - Toxicological Information**Acute Toxicity**

Oral (rat): Not tested.

Dermal (rabbit): Not tested.

Inhalation (rat): Not tested.

Skin Irritation: Not tested.

Eye Irritation: Not tested.

Carcinogenicity: Not tested. No components listed as carcinogens by IARC, NTP, Z List or OSHA.

Mutagenicity: Not tested.

Reproductive Toxicity: Not tested.

Teratogenicity: Not tested.

Chronic Ingestion Effect None expected	Chronic Eye Effect None expected	Chronic Skin Effect None expected
Chronic Inhalation Effect None known	Sensitization to Material None expected	Synergistic Materials None expected

SECTION XII - Ecological Information

Mobility Oxide component not mobile in soil.	Persistence/Degradability The oxide component of this material will persist.	Bio-Accumulation This material is not expected to bio-accumulate.
Ecotoxicity Acute Fish Toxicity: Not tested. Acute Daphnia Toxicity: Not tested.		

WGK Water Hazard Class: Not determined.

SECTION XIII - Disposal Considerations

Legal Classification

Dispose of in accordance with all applicable National, State and Local regulations. Same considerations should be given to the disposal of empty containers.

As sold, not defined as hazardous waste under U.S. RCRA (Resource Conservation and Recovery Act) regulations.

Waste Key No. Not determined.

SECTION XIV - Transport Information

UN Number Not applicable	UN Proper Shipping Name Non-hazardous/Non-regulated	UN Class Not applicable
UN Packing Group Not applicable	GGVS/GGVE/RID/ADR/IMDG-Code/ICAO-TI Information Not determined	US Rail Regulations Not determined

SECTION XV - Regulatory Information

National Registries: All components are in compliance with the inventories below:

Australia: AICS Australian Inventory List

Canada: CEPA, Canadian Environmental Protection Act, 6th Amendment, Domestic Substance List.

China: Inventory of Existing Chemical Substances in China.

Europe: EINECS, European Inventory of Existing Commercial Chemical Substances.

United States: TSCA, Toxic Substance Control Act.

Japan: MITI, Ministry of International Trade and Industry List of Existing Chemical Substances.

Korea: ECL, Existing Chemical List.

Europe (EU): This material is not defined as a dangerous substance regarding EU Directive 67/548/EEC and its various amendments and adaptations.

U.S. Clean Air Act, 1990: No components are listed as hazardous air pollutants. No components contain or are manufactured with Class I or Class II ozone depleting chemicals, as defined in the Clean Air Act of 1990.

U.S. Clean Water Act (40 CFR 116): No components are listed.

U.S. SARA Title III – Superfund Amendments and Reauthorization Act (SARA)

Section 302: Does not contain any constituents that are identified as extremely hazardous.

Section 311/312: Under SARA 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are: 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

Section 311/312 – MSDS Requirements - Not regulated.

Section 313: Does not contain any of the substances identified under Section 313 as toxic chemicals in excess of the *de minimis* concentrations necessary to be subject to this rule.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, 40 CFR 302): This material is not a hazardous substance under the CERCLA. Notification of spills of this material is not required.

SECTION XVI - Other Information

Reference Sources Used

Sax, Irving N. & Lewis Sr., Richard J. *Dangerous Properties of Industrial Materials*, 7th Edition.

ACGIH, *Documentation of TLVs and BEIs*, 6th edition.

Sax, Irving N. & Lewis Sr., Richard J. *Dangerous Properties of Industrial Materials*, 7th Edition. xCook, Warren A., *Occupational Exposure Limits Worldwide*, 1988.

Revision Indicator

Revised sections of the MSDS will be indicated by an asterisk (*) in front of the section affected.

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