

MATERIAL SAFETY DATA SHEET

Section 1. Product and Company Information

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SUPERSEDES MSDS DATED: October 29, 1999

PRODUCT NAME: CeRam-Kote Organic Zinc Primer



The information contained herein is accurate to the best of our knowledge. However, Freecom, Inc does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.

Section 2. Composition and Ingredient Information

Common Name	Chemical Name	CAS Number	Weight %
PART-A CeRam-Kote Organic Zinc Primer (Base)			
Epoxy Resin	Bisphenol-A Epoxy	25068-38-6	45 to 50
Alkylene Carbonate	1,2-dioxolan-2-one, methyl-	108-32-7	15 to 20
Methyl Ethyl Ketone	2-Butanone	78-93-3	15 to 20
Fumed Silica	Hydrophobic Silicon Dioxide	67762-90.7	1 to 5
PART-B CeRam-Kote Organic Zinc Primer (Curing Agent)			
Benzyl Alcohol	Benzyl Alcohol	100-51-6	>6
Methyl Isobutyl Ketone	4-methyl-2-pentanone	108-10-1	28 to 34
Methyl Ethyl Ketone	2-Butanone	78-93-3	15 to 20
PART-C CeRam-Kote Organic Zinc Primer (Zinc Dust)			
Zinc Metallic		7440-66-6	95 to 96
Zinc Oxide		1314-13-2	4 to 5
Lead		7439-92-1	0.15
Cadmium		7440-43-9	0.02

Section 3. Physical Data

Description	CeRam-Kote Organic Zinc Primer (Catalyzed)	PART-A: CeRam-Kote Organic Zinc Primer (Base)	PART-B: CeRam-Kote Organic Zinc Primer (Curing Agent)	PART-C: CeRam-Kote Organic Zinc Primer (Zinc Dust)
Specific Gravity (kg/l)	2.84	3.93	0.91	7.1
Vapor Density (Air = 1)	>Air	>Air	>Air	N/A
Solubility in Water	N/A	Insoluble	Miscible	Low
Viscosity (centapoise)	400 cP	>5,000 cP	200 cP	N/A
pH	9	8	9	N/A
Appearance and odor	Clear, colorless liquid, slight odor	Clear, colorless liquid	Amber liquid, Ammoniacal odor	Very fine grayish brown to black powder
Total Volatiles	16.0	6.0	63.0	N/A
Non-Volatiles	84.0	94.0	37.0	N/A
VOC content				N/A

Section 4. Fire Fighting Measures

Description	CeRam-Kote Organic Zinc Primer (Catalyzed) and/or PART-A: CeRam-Kote Organic Zinc Primer (Base)	PART-B: CeRam-Kote Organic Zinc Primer (Curing Agent)	PART-C: CeRam-Kote Organic Zinc Primer (Zinc Dust)
Flashpoint	64°F (17.8°C) (when catalyzed)	<64°F (17.8°C)	N/A
Flammable Limits	LFL: 1.2—MIBKUFL: 8.0—MIBK	LFL: 1.2—MIBKUFL: 8.0—MIBK	N/A
Auto Ignition Temperature	N/A	N/A	N/A
Extinguishing Media	Use water spray, dry chemical, foam or carbon dioxide to extinguish flames. Use water spray to cool fire-exposed containers. Water or foam may cause frothing.	Ignition will give rise to a Class B fire. In case of large fire use water spray, alcohol foam. In case of a small fire use carbon dioxide, dry chemical, dry sand or limestone. Water may be ineffective	Dry powder extinguisher preferred; dry chemical. AVOID WATER.
Unusual Fire and Explosion Hazards	Do not expose containers to heat, flame, sparks, static electricity or other sources of ignition. They may explode and cause injury or death. Flammable liquid can release vapors which can ignite explosively.	Do not expose containers to heat, flame, sparks, static electricity or other sources of ignition. They may explode and cause injury or death. Flammable liquid can release vapors which can ignite explosively. May generate toxic or irritating combustion products.	Bulk dust in contact with water or damp air evolves hydrogen. The heat produced during this reaction could ignite the hydrogen. An explosive condition may exist if this happens in a confined space. Dry dust forms explosive mixtures with air, if ignited. Avoid open flames or sparks of any kind near wet material.

Section 4. Fire Fighting Measures (continued)

Description	CeRam-Kote Organic Zinc Primer (Catalyzed) and/or PART-A: CeRam-Kote Organic Zinc Primer (Base)	PART-B: CeRam-Kote Organic Zinc Primer (Curing Agent)	PART-C: CeRam-Kote Organic Zinc Primer (Zinc Dust)
Fire Fighting Instructions	Firefighters should wear butyl rubber boots, gloves and chemical resistant personal protective body suit and a self-contained breathing apparatus. Shut off fuel to the fire. Use water spray to cool fire exposed surfaces, to protect personnel, and to disperse vapors. Either allow fire to burn under controlled conditions or extinguish with alcohol type foam and dry chemical. Try to cover liquid spills with foam.	Firefighters should wear butyl rubber boots, gloves and chemical resistant personal protective body suit and a self-contained breathing apparatus. Shut off fuel to the fire. Use water spray to cool fire exposed surfaces, to protect personnel, and to disperse vapors. Either allow fire to burn under controlled conditions or extinguish with alcohol type foam and dry chemical. Try to cover liquid spills with foam.	Dry Zinc Dust will not ignite spontaneously, but once ignited, may burn readily in air. DO NOT SPREAD MATERIAL. Smother and allow fire to go out. Wear self-contained breathing apparatus.
Hazardous Combustion Products	Carbon dioxide, carbon monoxide, various hydrocarbons, irritating aldehydes, acids and ketones	May generate carbon monoxide gas, carbon dioxide, toxic nitrogen oxide gases, and/or ammonia gas. Personnel in vicinity and downwind should be evacuated.	Hydrogen gas, Chloride gas

Section 5. Reactivity Data

Description	CeRam-Kote Organic Zinc Primer (Catalyzed) and/or PART-A: CeRam-Kote Organic Zinc Primer (Base)	PART-B: CeRam-Kote Organic Zinc Primer (Curing Agent)	PART-C: CeRam-Kote Organic Zinc Primer (Zinc Dust)
Stability	Stable	Stable	Stable in itself.
Incompatibility	Avoid contact with amines, strong alkalis, strong mineral acids, strong oxidizing agents, caustics, alkanolamines, ammonia, chlorinated compounds	Avoid strong oxidizing agents	Avoid moisture, alkalis or acids
Hazardous Decomposition Products	Toxic levels of carbon monoxide, carbon dioxide, irritating aldehydes and ketones may be formed on burning. Heat in air may produce irritating aldehydes, acids and ketones.	Carbon dioxide (fire), carbon monoxide (fire), nitrogen oxides (fire), ammonia when heated; irritating fumes at elevated temperatures. Nitrosamines, aldehydes. Organic acid vapors. Nitrogen oxide can react with water vapors to form corrosive nitric acid.	Hydrogen gas, though not a decomposition product per se. May evolve under conditions described below.
Hazardous Polymerization	Will not occur.	Will not occur.	Will not occur.

Section 6. Health and Safety

	CeRam-Kote Organic Zinc Primer (Catalyzed) and/or PART-A: CeRam-Kote Organic Zinc Primer (Base)	PART-B: CeRam-Kote Organic Zinc Primer (Curing Agent)	PART-C: CeRam-Kote Organic Zinc Primer (Zinc Dust)
Primary Routes of Exposure	Inhalation, skin, eye	Inhalation, skin eye	Inhalation, skin, eye
Potential Health Effects	<p>Acute (short term): Exposure may cause severe eye irritation. If not removed promptly, will injure eye tissue, which may result in permanent damage. Frequent or prolonged skin contact may irritate or cause dermatitis, redness, burning, skin damage, or allergic skin reaction. Inhalation may cause headaches, dizziness and may have other central nervous system effects. May cause irritation of the nose and throat, nausea and drowsiness. Ingestion may cause bronchopneumonia, pulmonary edema,, lung damage, nausea, diarrhea, abdominal discomfort. Swallowing large amounts may be harmful.</p>	<p>Acute (short term): Vapor can cause lacrimation, conjunctivitis and corneal edema. Contact with eyes causes severe irritation and pain. If not promptly removed, may cause permanent damage to eye tissue. Contact with skin may cause dryness, itching, rash, irritation and/or pain. Prolonged contact may result in chemical burns and permanent damage. Inhalation may cause irritation to the respiratory tract, headaches and dizziness, and may have other central nervous system effects. Coughing and chest pain may result. If absorbed through the skin, may cause nausea, headache and general discomfort. Swallowing may cause lung inflammation, bronchopneumonia, pulmonary edema, and/or damage. Exposure may cause nausea, vomiting, diarrhea, dizziness, drowsiness, weakness, fatigue, headache, unconsciousness.</p> <p>Chronic (long term): Repeated and/or prolonged exposures may result in conjunctivitis, corneal damage, defatting, rash or skin irritation, and/or dryness of nasal passages. May aggravate pre-existing disorders of these organs: mild, reversible liver or kidney effects</p>	<p>Acute and Chronic: Dust and fumes can cause nausea, gastric pain, irritation to the upper respiratory tract. Chloride, as a gas can cause pulmonary problems and is extremely irritating to the mucous membrane of the eyes and respiratory tract. May experience a metallic taste, respiratory irritation and, with metal fume fever, flu-like symptoms.</p>
Medical Conditions Aggravated by Exposure	Overexposure has been suggested to cause skin sensitization and may aggravate pre-existing disorders of skin sensitization.	Persons with a history of eye disease, skin disorders or allergic conditions may be at increased risk for worsening their conditions from exposure to this product.	

Section 7. First Aid Measures

Description	CeRam-Kote Organic Zinc Primer (Catalyzed) and/or PART-A: CeRam-Kote Organic Zinc Primer (Base)	PART-B: CeRam-Kote Organic Zinc Primer (Curing Agent)	PART-C: CeRam-Kote Organic Zinc Primer (Zinc Dust)
Inhalation	Remove to fresh air. If breathing has stopped, give assisted respiration, or if labored, give oxygen. If person is conscious and can swallow, give water, but do not induce vomiting. Keep victim warm and quiet. Seek prompt medical attention.	Remove to fresh air. If breathing has stopped, give assisted respiration, or if labored, give oxygen. Prevent aspiration of vomit. Turn victim's head to the side. Keep victim warm and quiet. Seek prompt medical attention.	Remove from exposure, start first aid and call for medical assistance.
Eyes	Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.	Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.	Flush with running water for at least 15 minutes. Seek medical attention.
Skin	Remove contaminated clothes. Immediately flush affected area with water for at least 15 minutes; use soap if available. Seek medical attention. Launder clothing before reuse.	Remove contaminated clothes. Immediately flush affected area with water for at least 15 minutes; use soap if available. Seek medical attention. Launder clothing before reuse.	Wash well to remove material. If irritation persists, seek medical attention.
Ingestion	DO NOT induce vomiting. Call a physician immediately. This material is an aspiration hazard. If individual is drowsy or unconscious, place on left side with the head down. If possible, do not leave individual unattended.	DO NOT induce vomiting. Call a physician immediately. This material is an aspiration hazard. If individual is drowsy or unconscious, place on left side with the head down. If possible, do not leave individual unattended.	DO NOT induce vomiting. Seek medical attention.

Section 8. Exposure Controls and Personal Protection

Exposure controls

INGREDIENT	OSHA PEL (8-HR TWA)	ACGIH TLV (8-HR TWA)
Epoxy Resin	5 mg/m ³ (respirable fraction), 15 mg/m ³ (total fraction)	10 mg/m ³
Alkylene Carbonate		
Methyl Ethyl Ketone	200 PPM, STEL 300 PPM	200 PPM, STEL 300 PPM
Fumed Silica	2 mg/m ³	2 mg/m ³
Benzyl Alcohol	None established	None established
Methyl Isobutyl Ketone	100 PPM	50 PPM, STEL 75
Zinc Metallic		5 (fume)
Zinc Oxide	5	5
Lead	50.0 µg/m ³	0.15
Cadmium	5.0 µg/m ³	0.5

Section 8. Exposure Controls and Personal Protection (continued)

Personal Protection

Description	CeRam-Kote Organic Zinc Primer (Catalyzed) and/or PART-A: CeRam-Kote Organic Zinc Primer (Base)	PART-B: CeRam-Kote Organic Zinc Primer (Curing Agent)	PART-C: CeRam-Kote Organic Zinc Primer (Zinc Dust)
Engineering controls	Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below TLV(s). Use explosion-proof ventilation equipment.	Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below TLV(s). Use explosion-proof ventilation equipment.	Store in well ventilated and dry areas to prevent formation and build-up of explosive hydrogen-air mixtures. Failure to vent may cause explosive concentrations. Local exhaust recommended.
Respiratory Protection	Wear NIOSH/MSHA approved air supplied respirator. OSHA regulations also permit other NIOSH/MSHA respirators (negative control type) under specified conditions.	Wear NIOSH/MSHA approved air supplied respirator. OSHA regulations also permit other NIOSH/MSHA respirators (negative control type) under specified conditions.	Wear NIOSH approved dust filter respirator.
Dermal Protection	Wear impervious rubber gloves, long sleeved clothing. To prevent repeated or prolonged skin contact, wear impervious clothing and boots..	Wear impervious rubber gloves, long sleeved clothing. To prevent repeated or prolonged skin contact, wear impervious clothing and boots..	Wear impervious rubber gloves. Wear required safety equipment and dust mask.
Eye Protection	Splash-proof chemical goggles/ In emergency situations, use eye goggles with a full face shield.	Splash-proof chemical goggles/ In emergency situations, use eye goggles with a full face shield.	Chemical protective goggles.

Section 9. Spills, Leaks and Disposal

Description	CeRam-Kote Organic Zinc Primer (Catalyzed) and/or PART-A: CeRam-Kote Organic Zinc Primer (Base)	PART-B: CeRam-Kote Organic Zinc Primer (Curing Agent)	PART-C: CeRam-Kote Organic Zinc Primer (Zinc Dust)
Land Spill	Eliminate sources of ignition. Reduce vapor spreading with a water spray. Prevent additional discharge of material. Implement cleanup procedures, keep public away and advise authorities. Prevent liquid from entering sewers, watercourses or low areas. Contain spilled liquid with sand or earth. Do not use combustible materials such as sawdust. Recover by pumping or with a suitable absorbent into containers for later disposal.	Eliminate sources of ignition. Reduce vapor spreading with a water spray. Prevent additional discharge of material. Implement cleanup procedures, keep public away and advise authorities. Prevent liquid from entering sewers, watercourses or low areas. Contain spilled liquid with sand or earth. Do not use combustible materials such as sawdust. Recover by pumping or with a suitable absorbent into containers for later disposal.	If spilled, dust should be removed by vacuuming or sweeping to prevent heavy concentrations of airborne dust. Return all clean-up material to properly labeled containers. Clean-up personnel should wear respirators. Prohibit smoking and avoid all ignition sources.

Section 9. Spills, Leaks and Disposal (continued)

Description	CeRam-Kote Organic Zinc Primer (Catalyzed) and/or PART-A: CeRam-Kote Organic Zinc Primer (Base)	PART-B: CeRam-Kote Organic Zinc Primer (Curing Agent)	PART-C: CeRam-Kote Organic Zinc Primer (Zinc Dust)
Water Spill	Eliminate sources of ignition. Warn occupants and shipping in surrounding and downwind areas of fire and explosion hazard and request all to stay clear. Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.	Eliminate sources of ignition. Warn occupants and shipping in surrounding and downwind areas of fire and explosion hazard and request all to stay clear. Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.	N/A
Air Release	Spills of this material may release volatile organic compounds into the air. Spills should be cleaned or covered to prevent volatilization	Spills of this material may release volatile organic compounds into the air. Spills should be cleaned or covered to prevent volatilization	N/A
Disposal Considerations	Characteristic hazardous waste (D001) due to ignitability	Characteristic hazardous waste (D001) due to ignitability	Dispose in a dry closed container and away from ignition sources. Material has recyclable value. Follow Federal, State, and local regulations if disposed of.

Section 10. Transport Information

Description	PART-A: CeRam-Kote Organic Zinc Primer (Base)	PART-B: CeRam-Kote Organic Zinc Primer (Curing Agent)	PART-C: CeRam-Kote Organic Zinc Primer (Zinc Dust)
DOT/IATA/IMDG Shipping Names	Resin Solution	Resin Solution	N/A
Hazard Class or Division	3.2	3.2	N/A
Secondary	None	None	N/A
UN Identification Number	UN 1866	UN 1866	N/A
Packing Group	II	II	N/A
Label(s) required	Flammable (3)	Flammable (3)	N/A
Quantity Limitations (Air only)			N/A
Passenger Aircraft	5 liters (1.25 gallons):	5 liters (1.25 gallons):	N/A
Cargo Aircraft	60 liters (15 gallons)	60 liters (15 gallons)	N/A
Packing Instructions			N/A
Passenger Aircraft	305	305	N/A
Cargo Aircraft	307	307	N/A

Section 11. Regulatory Information

Description	PART-A: CeRam-Kote Organic Zinc Primer (Base)	PART-B: CeRam-Kote Organic Zinc Primer (Curing Agent)	PART-C: CeRam-Kote OrganicZinc Primer (Zinc Dust)
ERG Number	26	26	N/A
TSCA Status	Each ingredient is on the inventory	Each ingredient is on the inventory	N/A
SARA Title III	Sec 304: MIBKSec 313: MIBK	Sec 304: MIBKSec 313: MIBK	N/A
Clean Air Act	MIBK listed as HAP	MIBK Listed as HAP	N/A