
**MATERIAL SAFETY DATA SHEET (MSDS)
ZIRCONIA SEPARATOR POWDER SHEETS**

IDENTIFICATION

BRAND NAMES: Zirconia Separator Powder Sheets, SPS Sheets, SPS-ZR-C, SPS-ZR-M, SPS-ZR-F

CHEMICAL FAMILY: Mixture.

FORMULA: Proprietary.

MANUFACTURER

C12 Advanced Technologies, LLC
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Suite C-500
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INFORMATION AND EMERGENCY PHONE NUMBER

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PHYSICAL DATA

FORM: flexible sheet

ODOR: Not determined

APPEARANCE: flexible sheet with granular yellow particles

SOLUBILITY IN WATER: organic binder is soluble

SOFTENING POINT: N/E

BOILING POINT: N/E

VAPOR DENSITY: N/E

EVAPORATION RATE: N/E

N/E: Not established

CHEMICAL COMPONENTS

Unspecified components are proprietary and/or non-hazardous.

Materials	CAS#
ZrO ₂ (zirconia)	1314-23-4
Ethoxylated 2,4,7,9-tetramethyl 5 decyn-4,7-diol	9014-85-1
Tetramethyl-5-decyne-4,7-diol, 2,4,7,9-,	126-86-3

HAZARDOUS REACTIVITY

INSTABILITY: Stable under normal conditions.

INCOMPATIBILITY: Contains organic materials that are incompatible with oxidizing agents, strong acids or bases, heat, ignition sources, and moisture. Avoid temperatures above 130°C (266°F) Exposure to elevated temperatures can cause product to decompose.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS: Decomposition products at elevated temperatures may include water, carbon monoxide, carbon dioxide, hydrocarbon fragments, aldehydes, ketones and smoke.

HAZARDOUS POLYMERIZATION: Will not occur.

FIRE AND EXPLOSION DATA

AUTO IGNITION : No test data available.

FLASHPOINT : Not applicable to solid product.

FIRE AND EXPLOSION HAZARDS: Carbon powders and other components are fixed in an organic binder matrix, and are not likely to constitute a dust explosion hazard. Keep product away from heat, open flames, and other ignition sources. The product is not considered an unusual fire or explosion hazard.

EXTINGUISHING MEDIA: In case of fire use dry chemical, carbon dioxide, or dry sand extinguishing media.

SPECIAL FIREFIGHTING INFORMATION: Toxic decomposition products may form under fire conditions. (See decomposition section.) Wear full protective clothing and a full face shield, positive pressure, self-contained breathing apparatus (SCBA). Decontaminate contaminated clothing and equipment with soap and water. Dispose of residues per federal, state, and local regulation.

HEALTH HAZARD INFORMATION

SUMMARY OF PRINCIPAL HEALTH EFFECTS

ZrO₂ (zirconia powders).

INHALATION – Unlikely route of exposure, product is in form of solid sheet. Average zirconia powder diameter in this product is much larger than particulates considered to be airborne respiratory hazards.

INGESTION – Not recommended. No known adverse affects.

SKIN – Not absorbed through skin; may cause abrasions.

EYES – May irritate eyes.

OTHER POTENTIAL HEALTH RISKS – None known.

Ethoxylated 2,4,7,9-tetramethyl 5 decyn-4,7-diol.

INHALATION – No data available.

INGESTION – No data available. LD50: 6,300mg/kg, Species: Rat

SKIN – No data available.

EYES – Severe eye irritation. Rinse immediately with plenty of water also under the eyelids for at least 20 minutes.

OTHER POTENTIAL HEALTH RISKS – Severe eye irritant. This component contains no listed carcinogens according to IARC, ACGIH, NTP and /or OSHA in concentrations of 0.1 percent or greater.

Tetramethyl-5-decyne-4,7-diol, 2,4,7,9-.

INHALATION – May cause nose throat and lung irritation. Inhalation of vapors and/or aerosols in high concentration may cause irritation of respiratory system. LC50 (1 h) :>20.8 mg/l, Species: Rat

INGESTION – No data available. LD50: 9,800 mg/kg, Species: Rat

SKIN – Mild skin irritation. LD50:>2,000mg/kg, Species: Rabbit.

EYES – Moderate eye irritation.

OTHER POTENTIAL HEALTH RISKS – This component contains no listed carcinogens according to IARC, ACGIH, NTP and /or OSHA in concentrations of 0.1 percent or greater. Subchronic exposure of this material or component in test animals has caused abnormalities in the following organ(s): liver.

FIRST AID INSTRUCTIONS

INHALATION: Unlikely route of entry into the body, product is in form of solid tape. Remove to fresh air immediately. Check for clear airway, breathing, and presences of pulse. Provide CPR for Persons without pulse or respirations. Prevent aspiration of vomit. If breathing is difficult give oxygen. Get medical attention immediately.

INGESTION: Unlikely route of entry into the body. *Never give anything by mouth to a convulsing or unconscious person.* Prevent aspiration of vomit. If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

SKIN: This product is not likely to be hazardous by skin contact due to low levels of potential irritants, however user should avoid intimate skin contact. Wash off immediately with plenty of water for at least 20 minutes. Wash thoroughly with mild soap and water. Seek medical attention if irritation develops.

EYES: Rinse immediately with plenty of water also under the eyelids for at least 20 minutes. Remove contact lenses. Get medical attention immediately.

EXPOSURE CONTROLS, PERSONAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: For most conditions no respiratory protection should be needed. Granular zirconia particles and other components are fixed in an organic binder matrix, and are not likely to constitute a dust hazard. Wear NIOSH-approved respirator if dust or fume exposure levels might be exceeded. Atmospheric levels should be maintained below the exposure guidelines. Provide general and local exhaust ventilation to control airborne levels below the exposure guidelines.

EYE PROTECTION: Use chemical safety goggles.

PROTECTIVE GLOVES: Avoid handling product directly. Use chemical resistant gloves, tweezers or other tools.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: No precautions other than clean body covering clothing should be needed.

WORK HYGIENIC PRACTICES: The usual precautionary measures for handling chemicals should be followed. Keep away from foodstuffs, beverages and feed. Remove all soiled and contaminated clothing immediately. Wash hands before breaks and at end of work. Wash hands thoroughly after handling.

EMERGENCY EQUIPMENT: Always ensure there is an emergency eye wash and shower in the area.

DISPOSAL INFORMATION

SPILL LEAK OR RELEASE: If the sheet is dropped or otherwise damaged so that it cannot be used, collect and place scrap portion in a chemical waste container for proper disposal or recovery. Material may become slippery when wet. Wash spill site after material pickup is complete, and dry area. Do not dump into any sewers, on the ground or into any body of water.

FOR UNUSED AND UNCONTAMINATED PRODUCT: Contact a licensed professional waste disposal service to dispose of this product. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

PRODUCT INFORMATION

HANDLING AND STORAGE: Store product in a cool, dry location. Keep away from open flame, heat, and other ignition sources. Avoid contact with skin, eyes, and clothing. Material may become slippery when wet.

ADDITIONAL INFORMATION

PERSON RESPONSIBLE FOR MSDS:

Safety Officer
C12 Advanced Technologies, LLC
Phone (206) 795-8925 USA
info@C12Materials.com

DATE OF LATEST MSDS REVISION

5/14/2013