FILMTRONICS

ADVANCED SEMICONDUCTOR PROCESS MATERIALS

I. Product Identification — 20B Spin-on Glass

Product Names: (**ALL** SOD / SOG containing Isopropyl Alcohol as the primary solvent and their proprietary compositions)
Synonyms: SOD / SOG
Chemical Family: Spin On Dopant / Spin On Glass
Chemical Formula: Proprietary
CAS Number: 67-63-0 (Isopropyl Alcohol)
DOT Shipping Number: UN1993 / II
DOT Shipping Name: Flammable Liquid, n.o.s.* (Isopropanol Solution)
DOT Hazard Class: Class 3
EPA Hazardous waste ID Number: D001

II. Composition / Information on Ingredients

This product is made of materials classified by the OSHA Hazard Communication Standard as hazardous.

Exposure guidelines are as follows:	ACGIH TLV	OSHA PEL
Isopropanol:	400pm	400ppm

*Percentages will vary between the many different proprietary compositions of SOD / SOG products.

III. Hazards Identification

Primary Routes of Exposure: Skin Contact
Signs and Symptoms of Overexposure: If overexposure occurs, may cause blindness if swallowed. Target organs: kidneys, central nervous system, liver. May result in dermatitis, severe eye irritation or burns, upper respiratory congestion, fatigue, nausea, vomiting, dizziness, stupor, and coma.
Medical Conditions Aggravated by Exposure: Prolonged or repeated exposure may aggravate pre-existing respiratory or cardiovascular conditions.
Listing as a Carcinogen: This material is not listed as a carcinogen by the NTP, IARC, or OSHA.

IV. First Aid Measures

Inhalation: Remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Seek medical attention if necessary.
Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Induce vomiting by giving one teaspoon of syrup of ipecac. Seek medical attention.
Eye Contact: Immediately flush eyes for 15 minutes with large amounts of water, lifting upper and lower eyelids. Seek medical attention and evaluation.
Skin Contact: Wash the affected area with soap and water. Remove contaminated clothing and wash before reuse. Seek medical attention if irritation persists.

V. Fire Fighting Measures

Flash Point: 11.6°C (not available)
Autoignition Temperature: 398.8°C (based on major component)
Lower Explosive Limit: 2 vol% (based on major component)
Upper Explosive Limit: 12 vol% (based on major component)
OSHA Flammability Class: Flammable Liquid (Class 3)
Extinguishing Media: Use alcohol foam, carbon dioxide or dry chemical.
Special Firefighting Procedures: Firefighters should wear self-contained, NIOSH-approved breathing apparatus and full protective clothing. Use water spray to keep fire-exposed containers cool and to reduce vapor concentrations. If possible, contain run-off water. After fire, flush area with water to prevent reignition.
Unusual Fire and Explosion Hazards: Vapors can form flammable mixtures at ordinary temperatures. Static electricity may accumulate and create a fire ignition hazard. Move container from fire area if possible. Vapors are heavier than air and may travel a considerable distance where they may linger and/or find an ignition source and flash back.

VI. Accidental Release Measures

Spill or Leak Procedures: Isolate hazard area and deny unnecessary entry. Remove all ignition sources. Provide personal protection and ventilation. Soak up spill with inert material, such as vermiculite, and collect in a chemical waste container. Close container tightly and dispose of properly.

VII. Handling and Storage

Handling and Storage Precautions: Wash thoroughly after handling. Use adequate ventilation. Avoid skin or eye contact; do not get on clothing. Do not ingest. Do not breathe product vapor or mist. Keep away from sparks or open flame. Store out of sun and away from heat and ignition sources.
Storage Recommendations: Store in well ventilated area, away from sun, heat and ignition sources (refer CofC for recommended storage temperature).

VIII. Exposure Controls / Personal Protection

Engineering Controls: Use in well exhausted areas. Handling should be preferably in carried out in a close system (e.g., exhaust hood). Electrical equipment should meet requirements for Class 1 Group D (National Electrical Code NFPA 70).
Work/Hygiene Practices: Avoid inhalation of fumes. If necessary wear NIOSH approved respiratory protection.
Personal Protective Equipment:

Respiratory: If necessary wear NIOSH approved respiratory protection for fumes (recommended if not in exhaust hood).
Eye/Face Protection: If necessary wear safety glasses or goggles (recommended).
Skin Protection: If necessary wear protective gloves and lab coat to prevent skin irritation (recommended).

FILMTRONICS INC., BOX 1521, BUTLER, PENNSYLVANIA 16003 U.S.A. • TEL: (724) 352-3790 • FAX: (724) 352-1772 • E-MAIL: SALES@FILMTRONICS.COM

IX. Physical and Chemical Properties

Appearance: Clear Liquid (slight alcohol, acetone-like odor)
Specific Gravity (water = 1.0): 0.789
Solubility in water (weight %): 100%
pH: Not Determined
Boiling Point: 82.2°C @ 760mmHg
Melting Point: -88.8°C
Vapor Pressure: 20.8mmHg @ 68°F
Vapor Density (Air = 1): 2.07kg/m^3
Evaporation Rate (Ether = 1): 7.7
Percent Volatile by Volume: 45-99%
Flash Point: 11.6°C

* Data in this section is based on the major component.

X. Stability and Reactivity

Stability: Stable under ordinary conditions of use and storage.
Incompatible Materials: Acids, isocyanates, acetaldehyde, chlorine, ethylene oxide, and strong oxidizing agents. Do not use with aluminum equipment at temperatures above 120°F.
Hazardous Decomposition Products: Combustion products would include carbon monoxide, carbon dioxide and water.
Hazardous Polymerization: Not Determined

XI. Toxicological Information

Carcinogenicity Information: Not Applicable
Reported Human Effects: Target is liver and kidneys.
Reported Animal Effects: None Available
Other Data: None Available

XII. Ecological Information

No ecological studies have been carried out on this product.

XIII. Disposal Considerations

RCRA: This product is considered a hazardous waste if discarded as listed in 40CFR261.33 with hazardous characteristics listed in 40CFR261 (Subpart C).
RCRA ID Number: D001
Disposal Methods: Incineration of waste material in an EPA-approved facility is highly recommended, allowing a solid, inert residue to form.

XIV. Transport Information

US DOT Hazard Class: Isopropanol Solutions (Class 3)
US DOT ID Number: UN1993 / II

XV. Regulatory Information

TSCA: All ingredients contained in this product are on the TSCA inventory.
SARA Title III – Section 302/304: Not an extreme hazardous substance subject to reporting under 40CFR355
SARA Title III – Section 311 and 312 (Hazard Class): Fire (immediate & delayed)
SARA Title III – Section 313: This product contains isopropanol subject to reporting under 40CFR372 – state right to know purposes (CA, NJ, FL, PA, MN, MA)
CERCLA: This product does not contain any chemicals subject to reporting under 40CFR302.4
Additional Regulatory Information: None
WHMIS Classification: Unknown
Foreign Inventory Status: Unknown

XVI. Other Information

Disclaimer: The information and recommendations contained in this Material Safety Data Sheet have been compiled from sources believed to be reliable and to represent the most reasonable current opinion on the subject when the MSDS was prepared. No warranty, guaranty or representation is made as to the correctness or sufficiency of the information. The user of this product must decide what safety measures are necessary to safely use this product, either alone or in the combination with other products, and determine its environmental regulatory compliance obligations under any applicable federal and state laws.
General Information Number: (724) 352-3790
Contact: Neal M. Christensen
CHEMTREC: (USA) (800) 424-9300 ; (International) (703) 527-3887
CHEMTREC: Filmtronics Company Code – D554

FILMTRONICS INC., BOX 1521, BUTLER, PENNSYLVANIA 16003 U.S.A. • TEL: (724) 352-3790 • FAX: (724) 352-1772 • E-MAIL: SALES@FILMTRONICS.COM