

PR-010



NANOSAN® -Sorb
MSDS

Material Safety Data Sheet

1. Product and Company Identification

Product Identity/ Trade Name: Polyurethane nanofibers / NANOSAN®-Sorb

Product Use: Multiple; specific intended uses will be cleared by the applicable regulatory agency

Manufacturer: SNS Nano Fiber Technology, LLC

5633 Hudson Industrial Parkway, Hudson, OH 44236

Internet: www.snsnano.com

Information phone: 330-655-0030

MSDS Date of Preparation: August 2008, Revised November 2011

2. Composition/ Information on Ingredients

No Hazardous Components found under OSHA 29 CFR 1910.1200. This product is not expected to create any hazard when it is used, handled, and/or processed by the end-user.

Generic ingredients of the final product: polyurethane; other ingredients are not listed as they are non-hazardous and/or present in amounts below reportable limits.

3. Hazards Identification [EMERGENCY OVERVIEW]

Smoke from burning compound will be irritating. Extinguishing media include water, ABC dry chemical, alcohol foam, and protein-type air foams. Carbon dioxide is not recommended due to a lack of cooling capacity. Wear positive-pressure self-contained breathing apparatus (SCBA) and approved protective clothing.

Physical and chemical hazards and effects

In the presence of an ignition source, dust can form an explosive mixture with air. At high temperature, thermal decomposition may produce toxic products.

Health Effects

Acute: At ambient temperature, there are no known or expected health effects

Chronic: None known.

Signs/Symptoms of exposure: Irritation

Routes of exposure/entry: Contact with molten polymer; inhalation of process vapors

Target organs: Eyes, Respiratory tract, Skin

Medical conditions aggravated by exposure: Individuals with bronchial asthma or other types of chronic obstructive respiratory diseases may develop bronchospasm if exposure to processing fumes or vapor is prolonged.

Carcinogenicity: Not listed or regulated by IARC, NTP, OSHA, or ACGIH.

Reproductive: None expected.

4. First Aid Measures

INHALATION	If any decomposition products or particulates are inhaled, remove individual to fresh air. Provide protection before allowing reentry. Get medical attention immediately.
SKIN CONTACT	Wash the affected area thoroughly with plenty of water and soap.
EYE CONTACT	Immediately flush eyes with copious amount of flowing water and seek medical attention
INGESTION	Remove all material from the mouth and consult a physician immediately

5. Fire Fighting Measures

EXTINGUISHING MEDIA	Water spray, dry powder, foam
SPECIFIC HAZARDS WITH REGARD TO FIRE-FIGHTING MEASURE	<p>In the presence of an ignition source, dust can form explosive mixture with air (in an enclosed space).</p> <p>At temperature above 200°C, thermal decomposition may produce toxic products [Organic derivatives, carbon monoxides]</p> <p>Thermoplastic polymer can burn. Protect product from flames of any kind; maintain proper clearance when using heat devices, etc.</p> <p>Irritating or toxic substances will be emitted upon burning, combustion or decomposition. Large masses of molten polymer held at elevated temperatures for extended periods of time may auto-ignite.</p>
SPECIAL EQUIPMENT FOR THE PROTECTION OF FIREFIGHTERS	Wear protective clothing, safety goggles and self-contained breathing apparatus equipped with a full facepiece and operated in a pressure-demand mode.

6. Accidental Release Measures

Personal precautions	<p>Avoid contact with eyes</p> <p>Avoid inhalation of dust</p>
Environmental Precautions	<p>Do not allow release into the environment; dispose of properly by incineration or placement into land fill</p> <p>Do not discharge the liquid product into drains. Do not sweep or flush product into sewers or waterways.</p>
Methods for clean up and recovery	<p>Collect product by mechanical means. Sweep up carefully and place into container for reuse or disposal.</p> <p>Do not rinse with water (will make ground slippery)</p> <p>Absorb moist product with an inert absorbent material</p>
Containment	No specific requirements
Evacuation	Not Applicable

7. Handling and Storage

Post Processing Activities [to produce shape]	Cutting, sanding, sawing, grinding, drilling, or regrinding may create dust or "fines". Powders, dust, and/or fines may pose a dust explosion hazard.
Specific Handling Measures	<p>Avoid dust formation</p> <p>Avoid accumulation of static charges</p> <p>Avoid spreading product on floor (Product becomes slippery when damp)</p>
Storage	<p>Keep container sealed when not in use</p> <p>Store cool and dry, under well-ventilated conditions. Avoid excessive heat.</p> <p>Do not store near flammable agents</p> <p>Ground all equipment used for production; use GFI circuits</p>

8. Exposure Controls/Personal Protection

Personal protective equipment [for manufacturing]	<p>Wear N95 filtering facemask/respirator to prevent inhalation of dust</p> <p>Wear goggles to avoid contact with eyes</p> <p>Wear disposable protective suit and gloves to avoid skin contact</p>
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9. Physical and Chemical Properties

Physical state	Solid
Form	Nonwoven
Color	White
Odor	Slight
Solubility in water	Swells in water; miscible, but will not dissolve
Auto ignition temperature	Above 400°C

10. Stability and Reactivity

Conditions to Avoid	Store sealed, away from moisture Keep away from heat and sources of ignition
Hazardous Decomposition Products	Thermal decomposition [200°C] produces toxic products: organic vapors, carbon monoxide Volatiles may be produced during overheating, combustion, or decomposition. These potential decomposition gases have not been fully determined but may include CO, CO ₂ , and small amounts of hydrogen cyanide, oxides of nitrogen, hydrocarbons, water vapor or combinations thereof, and smoke.

11. Toxicological Information

Caution must be exercised through the prudent use of protective equipment and handling procedures to minimize exposure. No toxicity information available for this product.

12. Ecological Information

Ecotoxicity/ Environmental Fate: None known or expected from this product as furnished. This product has not been tested.

Persistence/ degradability in water: Not biodegradable

13. Disposal Considerations

For waste disposal purposes, this product is not known to be defined or designated as hazardous by current provisions of the Federal (EPA) Resources Conservation and Recovery Act (RCRA, 40CFR261). Incinerate or landfill waste in a properly permitted facility in accordance with federal, state, and local regulations.

14. Transport Information

ADR/RID CLASS	Not regulated
IMDG CLASS	Not regulated
IATA CLASS	Not regulated
UN/NA NUMBER	Not regulated
HAZARD CLASS	Not regulated

15. Regulatory Information

This MSDS has been prepared in accordance with the hazard criteria of the OSHA Hazard Communication Standard, 29 CFR 1910.1200

U.S. Toxic Substances Control Act: All components of this material are on the TSCA Inventory or are exempt.

U.S. CERCLA-SARA:

SARA Title III Section 312 Hazard Category (40 CFR 311/312): Not Hazardous

SARA Section 313: This product does not contain toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and 40 CFR 372

California Proposition 65:

Per OSHA's approval of the California Hazard Communication Standard, Federal Register, page 31159 ff, 6 June 1977: ingredients present in the product known to the State of California to cause cancer, birth defects, or other reproductive hazards: None

Canadian Domestic Substances List (DSL):

Components of this product on the Canadian Domestic Substances List (DSL) or the Non-Domestic Substance List (NDSL): None

Canadian Ingredient Disclosure List:

Components of this product on the Canadian Ingredient Disclosure List (WHMIS): None

Canadian WHMIS Class: Not controlled

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations

16. Other Information

User responsibility/company disclaimer of liability

The above information is accurate to the best of our knowledge. However, SNS Nano Fiber Technology, LLC makes no warranty expressed or implied with respect to this information and disclaims all liability for reliance thereon. The information and recommendations are offered for the user's consideration and examination; it is the user's responsibility to satisfy themselves that they are suitable and complete for a particular use.