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DATA SHEETS

High Density Polyethylene

Physical Properties	Metric	English	Comments
Specific Gravity	0.96 g/cc	0.0347 lb/in³	ASTM D792
Water Absorption	Max 0.01 %	Max 0.01 %	Immersion, 24hr; ASTM D570(2)
Water Absorption at Saturation	Max 0.01 %	Max 0.01 %	Immersion; ASTM D570(2)
Mechanical Properties			
Hardness, Shore D	70	70	ASTM D2240
Tensile Strength, Ultimate	31.7 MPa	4600 psi	ASTM D638
Elongation at Break	400 %	400 %	ASTM D638
Tensile Modulus	1.38 GPa	200 ksi	ASTM D638
Flexural Modulus	1.2 GPa	174 ksi	ASTM D790
Flexural Yield Strength	31.7 MPa	4600 psi	ASTM D790
Compressive Strength	31.7 MPa	4600 psi	10% Def., 73°F; ASTM D695
Compressive Modulus	0.689 GPa	100 ksi	ASTM D695
Coefficient of Friction	0.2	0.2	Dry vs. Steel; QTM55007
Izod Impact, Notched	0.694 J/cm	1.3 ft-lb/in	ASTM D256 Type A
Electrical Properties			
Surface Resistivity per Square	Min 1e+015 ohm	Min 1e+015 ohm	ASTM D257
Thermal Properties			
CTE, linear 68°F	110 µm/m-°C	61 µin/in-°F	(-40°F to 300°F); ASTM E831
Melting Point	127 °C	260 °F	Crystalline, Peak; ASTM D3418
Maximum Service Temperature, Air	82.2 °C	180 °F	Long Term
Deflection Temperature at 1.8 MPa (264 psi)	80 °C	176 °F	ASTM D648
Flammability, UL94*	HB	HB	1/8 inch
Qualitative Processing Properties			
Compliance - FDA	Compliant		
Machinability	3		1-10, 1=Easier to Machine
Service in Alcohols	Acceptable Service		
Service in Aliphatic Hydrocarbons	Unacceptable		

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Service in Aromatic Hydrocarbons	Unacceptable
Service in Chlorinated Solvents	Unacceptable
Service in Ethers	Unacceptable
Service in Ketones	Unacceptable
Service in Strong Acids	Acceptable Service
Service in Strong Alkalies	Acceptable Service
Service in Sunlight	Limited Service
Service in Weak Acids	Acceptable Service
Service in Weak Alkalies	Acceptable Service

All statements, technical information and recommendations contained in this database are presented in good faith, based upon tests believed to be reliable and practical field experience.

* This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

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MATERIAL SAFETY DATA SHEET

MSDS-17

I. General Information

Chemical Name & Synonyms High Density Polyethylene	Trade Name & Synonyms: Linear High Density Polyethylene, Champline, Sanalite
Chemical Family Linear High Density Polyethylene	Formula (Ch2-ch2) n
Proper DOT Shipping Name: N/A	DOT Hazard Classification: N/A

II. Ingredients

Principal Components	Percent	Threshold Limit Value (Units)
Polyethylene (CAS 9002-88-4)	>99%	10 mg/m3 (total dust)

III. Physical Data

Boiling Point (Deg. F.) N/A	Specific Gravity (H20=1) 0.96-0.97
Vapor Pressure (mm Hg) N/A	Percent Volatile By Volume (%)
Vapor Density (Air=1) N/A	Evaporation Rate (Air =1) N/A
Solubility in Water Negligible	pH N/A
Appearance & Odor Waxy Solid, white with waxy odor.	

IV. Fire & Explosion Hazard Data

Flash Point (Test Method) Auto Ignition Temperature (Setchkin) 370°C (700 Deg. F.)		700 Deg. F. (370 Deg. C.) ASTM-D-1929 Method B
Flammable Limits	LEL	UEL
N/A	N/A	N/A

Extinguishing Media

Water, Foam, Carbon Dioxide, Dry Chemical, Synthetic Foams, Alcohol Resistant Foams

Special Fire Fighting Procedures: Soak thoroughly with water to cool and prevent re-ignition. The smoke can contain polymer fragments of varying composition, in addition to unidentified toxic and/or irritating compounds.

Unusual Fire & Explosion Hazards

Combustion by-products include, but are not limited to, carbon dioxide and carbon monoxide.

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V. Health Hazard Data

OSHA Permissible Exposure Limit	ACGIH Threshold Limit Value
15 mg/m^3 Total dust, 5 mg/m^3 respirable dust	10 mg/m^3 (total dust)
Carcinogen - NTP Program	**Carcinogen - IARC Program**
NO	NO

Symptoms of Exposure

None Known

Medical Conditions Aggravated By Exposure

None known, however, seek medical attention if constant irritation occurs. If thermal decomposition occurs, upper respiratory, eye, nose, and throat irritation may result.

Primary Route(s) of Entry

Inhalation of particulates.

Emergency First Aid

Molten material. If molten material comes in contact with the skin, cool under running water. Do not attempt to remove the molten material from the skin. Get medical attention.

VI. Reactivity Data

STABILITY ___ Unstable _X_ Stable INCOMPATABILITY Hazardous ___ May Occur Polymerization _X_ Will Not Occur	Conditions To Avoid None Known Materials To Avoid Strong oxidizing agents. Conditions To Avoid None Known

Hazardous Decomposition Products: Aliphatic Hydrocarbons

VII. Environmental Protection Procedures

Spill Response...Sweep up for Disposal or reuse.

Waste Disposal Method...Incineration or landfill - dispose of in accordance with Federal, State and Local regulations.

VIII. Special Protection Information

Eye Protection	Skin Protection
Glasses with side shields in dusty conditions.	Use insulated gloves when handling molten material.

Respiratory Protection (Specific Type) - NIOSH approved dust respirator recommended. If material is being burned wear an organic respirator.

Ventilation Recommended - Local ventilation in dusty conditions, or if thermal decomposition occurs.

Other Protection

Gloves and protective garments when handling molten material.

IX. Special Precautions

Hygienic Practices In Handling & Storage: Wash with soap and water.

Precautions For Repair & Maintenance Of Contaminated Equipment: Eliminate ignition sources.

Other Precautions

Store in a sprinkler protected warehouse. Since High Density is a polyethylene, it will burn with a hot flame if ignited. Avoid contact with ignition sources such as open flames. Keep a fire extinguisher near if welding is done in the area of High Density Polyethylene. If a heat source is present, keep the area well ventilated.

NFPA Code: Fire 1, Health 1, Reactivity 0

HMIS Code: Fire 1, Health 0, Reactivity 0

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X. Regulatory Information

OSHA Status: Polyethylene is not considered hazardous under OHSA.

TSCA Inventory Status: All ingredients are listed.

CERCLA Reportable Quantity (RQ): None

SARA Title III:

Section 302/304.No extremely hazardous substances

Section 311/312.No reporting requirements although it is suggested that storage of >10,000 lbs of polyethylene in one facility should be listed on a Tier II report.

Section 313: No reporting requirements.

Hazard data contained herein was obtained from raw material suppliers. The information presented is believed to be factual, as it was derived from the works and opinions of persons believed to be qualified. However, no facts contained in the information are to be taken as a warranty, or representation, for which spproducts**Inc. bears legal responsibility. The user should review any recommendation in the specific context of the intended use to determine if they are appropriate.**

N.A.= Not Applicable N.E.= Not Established