

Date last revised 09/11/2008 By M. Lykins

MSDS-14

I. Chemical Product and Company Identification

Chemical Name & Synonyms Ultra-High molecular Weight Polyethylene	Trade Name & Synonyms TIVAR® PolySteel
Chemical Family Linear High Density Polyethylene	Formula (ch ₂ -ch ₂) _n
Proper DOT Shipping Name: N/A	DOT Hazard Classification: N/A
Manufacturer: Quadrant EPP USA, Inc. 2120 Fairmont Avenue. Reading, PA 19605 (610) 320-6600	Chemtrec Phone Number 1-800-424-9300

II. Ingredients

Principal Components	Percent	Threshold Limit Value	OSHA PEL
Polyethylene (CAS 9002-88-4)	>50%	10 mg/m ³	15 mg/m ³
Iron Oxide CAS 1309-38-2	<50%	10 mg/m ³	5.0 mg/m ³

III. Physical Data

Boiling Point (Deg. F.) N/A	Specific Gravity (H₂O=1) 1.4-1.5
Vapor Pressure (mm Hg) N/A	Percent Volatile By Volume (%) <0.4
Vapor Density (Air=1) N/A	Evaporation Rate(Air =1) N/A
Solubility in Water Negligible	pH N/A
Appearance & Odor Black, Waxy solid	

IV. Hazard identification/Fire & Explosion Hazard

Flash Point (Test Method) - >350°C (662° F.) (ASTM-D-1929 Method B) (Setchkin) Auto Ignition Temperature - >350°C (662° F.)
Flammable Limits - N/A LEL - N/A UEL - N/A
Extinguishing Media: Water, Foam, CO ₂ , Dry Chemical
Special Fire Fighting Procedures Firefighter should be equipped with positive pressure, self-contained breathing apparatus in enclosed areas. NFPA Hazard Code: Health:1; Flammability:1; Reactivity:0; Special Hazard: See below
Unusual Fire & Explosion Hazards: Special Conditions to Avoid Dust is flammable when finely divided and suspended in air. High speed fabricating operations may generate enough frictional heat to cause the metal-filled polymer fabrication chips to smolder and ignite. This issue normally occurs after fabricating when the chips are in piles.

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V. Health Hazard Data

OSHA Permissible Exposure Limit - 15 mg/m³ (total dust)

ACGIH Threshold Limit Value - 5.0 mg/m³ (respirable dust) 10 mg/m³ (total dust)

Carcinogen - NTP Program - NO

Carcinogen - IARC Program - NO

Routes of Exposure: Eye contact

Physical Health Hazards:

Dust may form explosive mixtures with air. Avoid dust formation and control ignition sources. Polyolefin dust particles suspended in air are combustible and may be explosive. Keep away from heat, sparks, flame, and other ignition sources. Prevent dust accumulations and dust clouds. Employ grounding, venting, and explosive relief provisions in accordance with accepted engineering practices and NFPA provisions in any process capable of generating dust and/or static electricity. Explosion hazards apply only to dusts, not granular forms of this product. See also Special Precautions section below.

Signs and Symptoms of Acute Exposure:

Molten polymer may cause thermal burns. At process temperatures, irritating fumes may cause soreness of the nose and throat. Mechanical irritation is possible.

Chronic Health Effects Summary: No chronic health effects 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

Inhalation: If symptoms are experienced, move victim to fresh air. If symptoms persist, obtain medical attention.

Eye Contact: Wash eyes with clean, low pressure water. If irritation persists, seek medical advice.

Skin Contact:

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 immediately.

VI. Reactivity Data

STABILITY Unstable

Stable

INCOMPATIBILITY

Hazardous May Occur

Polymerization Will Not Occur

Conditions To Avoid - None Known

Materials To Avoid - None Known

Conditions To Avoid - None Known

Hazardous Decomposition Products: Aliphatic Hydrocarbons

VII. Environmental Protection Procedures

Spill Response - Sweep up for disposal.

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

VIII. Special Protection Information

Eye Protection: Glasses with side shields.

Skin Protection: When handling molten material protective clothing such as long sleeves or laboratory coat should be worn. Use heat-resistant gloves, boots and face protection.

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.
Handling: The handling of powder in both loading and unloading operations, as well as fabrication, may cause dust to be formed, and necessary precautions for personal protection (See Section VIII) should be used. As with all finely divided materials, precautions should be taken to avoid inhalation and eye contact.

IX. Special Precautions/Information

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

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

Transfer from storage with a minimum amount of dusting. Ground all transfer, blending, and dust collecting equipment to prevent static sparks in accordance with NFPA 70 "national Electric Code". Review and comply with all relevant NFPA provisions, including but not limited to NFPA 484 and NFPA 654 related to combustible dust hazards. Remove all ignition sources from material handling, transfer, and processing areas where dust may be present. Local exhaust ventilation should be provided in work area.

Other Precautions

Store in a sprinkler protected warehouse. Since TIVAR® PolySteel is 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 TIVAR® PolySteel. If a heat source is present, keep the area well ventilated.

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.

XI. Warning Label

TIVAR PolySteel – CAUTION: COMBUSTIBLE - DUST EXPLOSION AND FIRE HAZARD

This product is a metal-filled polymeric product. High speed fabricating operations may generate enough frictional heat to cause the metal-filled polymer fabrication chips to smolder and ignite. Please consult the product MSDS sheet for important information.

This product can create dust during machining that may cause respiratory irritation. Use a NIOSH approved dust respirator, or in the event that material is being burned, use an organic respirator. Please consult the product MSDS sheet for important information

NFPA Code: Fire 1, Health 1, Reactivity 0

HMS Code: Fire 1, Health 0, Reactivity 0

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 Quadrant EPP USA, 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