MATERIAL SAFETY DATA SHEET

Sheffield Plastics Inc.
A Bayer MaterialScience Company

Sheffield Plastics Inc.
119 Salisbury Road
Sheffield, MA 01257
USA

TRANSPORTATION EMERGENCY
CALL CHEMTREC: (800) 424-9300
INTERNATIONAL: (703) 527-3887

NON-TRANSPORTATION
Bayer Emergency Phone: (412)-923-1800
Bayer Information Phone: (800) 662-2927

1. Product and Company Identification

<table>
<thead>
<tr>
<th>Product Name:</th>
<th>Vivak® Copolyester Sheet</th>
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<tbody>
<tr>
<td>Material Number:</td>
<td>SH004486</td>
</tr>
<tr>
<td>Chemical Family:</td>
<td>Thermoplastic Polymer Sheet</td>
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<tr>
<td>Chemical Name:</td>
<td>Copolyester</td>
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</table>

2. Hazards Identification

Emergency Overview

CAUTION! Color: tint Form: solid sheets Odor: slight.
Melted product is flammable and produces intense heat and dense smoke during burning. Irritating gases/fumes may be given off during burning or thermal decomposition. May cause mechanical irritation (abrasion). Contact with hot material will cause thermal burns.

Potential Health Effects

Primary Routes of Entry: Inhalation, Skin Contact, Eye Contact

Medical Conditions Aggravated by Exposure: Respiratory disorders

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE

Skin
Acute Skin
For Product: Vivak® Copolyester Sheet
Contact with heated material can cause thermal burns.

Eye
Acute Eye
For Product: Vivak® Copolyester Sheet
May cause mechanical irritation.

General Effects of Exposure
Acute Effects of Exposure
For Product: Vivak® Copolyester Sheet
Gases and fumes evolved during the thermal processing or decomposition of this material may irritate the eyes, skin or respiratory tract.

Chronic Effects of Exposure
For Product: Vivak® Copolyester Sheet
Not expected to cause any adverse chronic health effects.

Carcinogenicity:
No Carcinogenic substances as defined by IARC, NTP and/or OSHA

3. Composition/Information on Ingredients

Hazardous Components
This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

4. First Aid Measures

Eye Contact
In case of contact, flush eyes with plenty of lukewarm water.

Skin Contact
In case of skin contact, wash affected areas with soap and water. Get medical attention if thermal burn occurs.

Inhalation
If inhaled, remove to fresh air.

Ingestion
Get medical attention.

5. Fire-Fighting Measures

Suitable Extinguishing Media: water, foam, dry chemical, carbon dioxide (CO2)

Special Fire Fighting Procedures
Firefighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes.

Unusual Fire/Explosion Hazards
Toxic and irritating gases/fumes may be given off during burning or thermal decomposition. Dust may form explosive mixtures with air.

6. Accidental release measures
Spill and Leak Procedures
If molten, allow material to cool and place into an appropriate marked container for disposal.

7. Handling and Storage

Storage Temperature:
maximum: 77 °C (170.6 °F)

Storage Period
Not Established

Handling/Storage Precautions
Handle in accordance with good industrial hygiene and safety practices. Wash thoroughly after handling. Avoid breathing dust.

Further Info on Storage Conditions
Protect equipment (e.g. storage bins, conveyors, dust collectors) with explosion vents.

8. Exposure Controls / Personal Protection

Country specific exposure limits have not been established or are not applicable

Industrial Hygiene/Ventilation Measures
General dilution and local exhaust as necessary to control airborne vapors, mists, dusts and thermal decomposition products below appropriate airborne concentration standards/guidelines, especially during cutting, grinding and high heat operations.

Respiratory Protection
Although no exposure limit has been established for this product, the OSHA PEL for Particulates Not Otherwise Regulated (PNOR) of 15 mg/m3 - total dust, 5 mg/m3 - respirable fraction is recommended. In addition, the ACGIH recommends 3 mg/m3 - respirable particles and 10 mg/m3 - inhalable particles for Particles (insoluble or poorly soluble) Not Otherwise Specified (PNOS).

Hand Protection
Wear heat resistant gloves when handling molten material.

Eye Protection
safety glasses with side-shields.

Skin and body protection
No special skin protection requirements during normal handling and use.

Additional Protective Measures
Employees should wash their hands and face before eating, drinking, or using tobacco products. Educate and train employees in the safe use and handling of this product. Purgings should be collected as small flat shapes or thin strands to allow for rapid cooling.

9. Physical and chemical properties

Form: solid
Appearance: sheets
Color: tint
Odor: slight
pH: not applicable
Melting Point: 220 - 250 °C (428 - 482 °F)
Boiling Point/Range: not applicable
Flash Point: > 450 °C (> 842 °F)
Lower Explosion Limit: Not Established
Upper Explosion Limit: Not Established
Vapor Pressure: not applicable
Specific Gravity: approximately 1.1 - 1.2
Solubility in Water: Insoluble
Autoignition Temperature: > 450 °C (> 842 °F)
Decomposition Temperature: 380 °C (716 °F)
Softening Point: 102 - 113 °C (215.6 - 235.4 °F)
Bulk Density: 38 - 42 lb/ft³

10. Stability and Reactivity

Hazardous Reactions
Hazardous polymerization does not occur.

Stability
Stable

Materials to avoid
None known.

Conditions to avoid
None known.

Hazardous decomposition products
By Fire and Thermal Decomposition: Carbon Dioxide; Bisphenol A; Phenol; Carbonic Acid, Diphenyl Ester; Carbon monoxide, hydrocarbons, phenol derivatives

11. Toxicological Information

Toxicity Data for Copolyester
Acute Oral Toxicity
LD50: > 3,200 mg/kg (Rat, Male)
LD50: > 3,200 mg/kg (mouse, male)

Acute dermal toxicity
LD50: > 1,000 mg/kg (Guinea pig)

Skin Irritation
Guinea pig, Slightly irritating

Eye Irritation
rabbit, Slightly irritating
Guinea pig, Non-irritating
12. Ecological Information

Ecological Data for Copolyester
Acute and Prolonged Toxicity to Fish
LC50: > 100 mg/l (Fathead minnow (Pimephales promelas), 96 h)

Acute Toxicity to Aquatic Invertebrates
LC50: > 100 mg/l (Water flea (Daphnia magna), 96 h)

13. Disposal considerations

Waste Disposal Method
Waste disposal should be in accordance with existing federal, state and local environmental control laws.

14. Transportation information

Land transport (DOT)
Non-Regulated

Sea transport (IMDG)
Non-Regulated

Air transport (ICAO/IATA)
Non-Regulated

15. Regulatory Information

United States Federal Regulations

OSHA Hazcom Standard Rating: Non-Hazardous

US. Toxic Substances Control Act: Listed on the TSCA Inventory.

US. EPA CERCLA Hazardous Substances (40 CFR 302):
Components
None

SARA Section 311/312 Hazard Categories:
Non-hazardous under Section 311/312

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A):
Components
None
US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required:

Components
None

If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

State Right-To-Know Information
The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

Massachusetts, New Jersey or Pennsylvania Right to Know Substance Lists:

<table>
<thead>
<tr>
<th>Weight %</th>
<th>Components</th>
<th>CAS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 100%</td>
<td>Copolyester</td>
<td>CAS# is a trade secret</td>
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</table>

16. Other Information

HMIS Rating

<table>
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<tr>
<th>Health</th>
<th>Flammability</th>
<th>Physical Hazard</th>
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<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>0</td>
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</table>

0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe
* = Chronic Health Hazard

The method of hazard communication for Sheffield Plastics Inc. is comprised of Product Labels and Material Safety Data Sheets. HMIS and NFPA ratings are provided by Sheffield Plastics Inc. as a customer service.

Contact Person: Product Safety Department
Telephone: (412) 777-2835
MSDS Number: 000000004486
Version Date: 10/28/2005
Report Version: 1.11

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