



MATERIAL SAFETY DATA SHEET

VALOX® FR-1 FILM

Revision : 11/08/1997, Supercedes issue : 19/09/1996

Page : 1/4

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

MANUFACTURER / SUPPLIER

GE Plastics
Plasticslaan 1, P. O. Box 117
4600 AC Bergen op Zoom
The Netherlands

TELEPHONE

During office hours: (31)-164-292046 (24 hr) ; After office hours: (31)-164-292911 (24 hr).

PRODUCT IDENTIFIER : VALOX® FR-1 thermoplastic polyester Film.
DESCRIPTION : Poly (butylene terephthalate) (PBT), CAS 30965-26-5 /
copoly (bisphenol-A / tetrabromobisphenol-A carbonate), CAS
32844-27-2 polymer blend with antimony oxide, CAS 1309-64-4.
PRODUCT USE : As film for flame retardant, electrical / electronic applications.

2. COMPOSITION / INFORMATION ON INGREDIENTS

This product consists primarily of high molecular weight polymers which are not expected to be hazardous.

3. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS

Eyes : Small particles may cause irritation / injury due to mechanical action.
Skin : Product not likely to cause skin irritation.
Ingestion : Not acutely toxic.
Inhalation : Product inhalation unlikely due to physical form.
Melt processing health effects : Molten plastic can cause severe burns.
: Processing fumes may cause irritation to the eyes, skin and respiratory tract, and in cases of severe over-exposure, nausea and headache.
Medical restrictions : When heated up to processing temperatures virtually all thermoplastics emit processing fumes. The exact composition and concentration of these processing fumes depend on the sheet formulation, including additives, the residence time in the processing equipment, equipment variables such as venting parameters and the processing temperature. When the product is processed according to GE Plastic's recommended guidelines (available on request) and taking normal precautions detailed below, there are no known adverse effects to human health. Certain sensitive individuals and those with respiratory impairments, however, may experience some temporary irritation by exposure to specific components in the processing fumes.

VALOX[®] FR-1 FILM

Revision : 11/08/1997, Supercedes issue : 19/09/1996

Page : 2/4

4. FIRST AID MEASURES

Eyes	: Remove contact lenses at once. Immediately flush eyes well with copious quantities of water or normal saline solution for 20-30 minutes. If irritation persists, seek medical attention.
Skin	: No first aid required.
Ingestion	: Since this material is not expected to be an ingestion problem, no first aid procedures are required.
Inhalation	: Not likely to be inhaled due to physical form.
Thermal processing	: For molten plastic skin contact, cool rapidly with water and seek immediate medical attention. Do not attempt removal of plastic without medical assistance. Do not use solvent for removal. : For processing fume inhalation irritation, leave contaminated area and breathe fresh air. If coughing, difficulty in breathing or any other symptoms develop, seek medical attention at once.

5. FIRE FIGHTING MEASURES

Fire fighting	: Approved pressure demand breathing apparatus and protective clothing should be used for all fires.
Extinguishing media	: This product will melt but will not be carried on the surface of water. : Water spray and foam are recommended. Water is the best extinguishing medium. : Carbon dioxide and dry chemical are not generally recommended because their lack of cooling capacity may permit re-ignition.
Hazardous combustion	: Hazardous combustion products may include intense heat, dense black smoke, carbon monoxide, carbon dioxide, hydrogen bromide and traces of hydrocarbon fragments.
Conditions of flammability	: Requires a continuous flame source to ignite.
Explosion data	
- Impact sensitivity	: Not sensitive to mechanical impact.
- Static discharge	: Not sensitive to static discharge.

6. ACCIDENTAL RELEASE MEASURES

General	: Sweep or gather up material and place in proper container for disposal or recovery (See Disposal Information).
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7. HANDLING AND STORAGE

Handling	: Follow good standard industrial hygiene practices. Apply adequate ventilation directly to the outside air.
Storage	: Inert material under normal storage conditions. No special precautions required. : Do not stock unsupported film or pallets too high.

VALOX[®] FR-1 FILM

Revision : 11/08/1997, Supercedes issue : 19/09/1996

Page : 3/4

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure controls	: A continuous supply of fresh air to the workplace, together with removal of processing fumes through exhaust systems is recommended.
Personal Protection	
- Eye/face	: Wear safety glasses with side shields when cutting the film.
- Respiratory	: Good industrial hygiene practice requires adequate general ventilation of the workplace. When dust and powder from secondary operations, such as grinding, sanding or sawing are not adequately controlled, use respirator approved for protection from dust.
- Hands	: Wear protective gloves when handling the film, as the edges may be sharp.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: Solid
Odour and appearance	: Plastic film with slight odour
Boiling point	: Not applicable
Melting point	: See comment below
Vapor pressure (mmHg)	: Negligible
Vapor density (air=1)	: Not applicable
Specific gravity (water=1)	: >1
Water solubility	: Insoluble
% Volatiles	: Negligible
pH	: Not applicable
Odour threshold	: Not established
Evaporation rate	: Negligible
Coefficient water/oil distr.	: Not established
Flash point	: Not applicable
Lower flammable limit	: Not established
Upper flammable limit	: Not established
Autoignition	: 360 °C, estimated
Comment	: This product does not exhibit a sharp melting point, but softens gradually over a wide temperature range.

10. STABILITY AND REACTIVITY

Stability	: Stable under recommended conditions of storage and handling.
Reactivity	: Not reactive under recommended conditions of handling, storage, processing and use.
Hazardous Decomposition	: Processing fumes evolved at recommended processing conditions may include trace levels of tetrahydrofuran (THF), phenol, alkylphenols, diarylcarbonates, acrylates and hydrogen bromide.

VALOX[®] FR-1 FILM

Revision : 11/08/1997, Supercedes issue : 19/09/1996

Page : 4/4

11. TOXICOLOGICAL INFORMATION

Product

- Acute oral : Oral LD50 (rat) > 5 g/kg, estimated.

Component

- Antimony oxide contained in this product tested in a chronic inhalation of 45 mg/m³ by guinea pigs resulted in extensive pneumonitis and fatty degeneration of the liver. Other long-term inhalation studies in rats and rabbits found lipid pneumonitis. One epidemiology study of antimony process workers suggests an increase in lung cancer. Animal studies and epidemiological studies suggests developmental activity.

12. ECOLOGICAL INFORMATION

General : Not expected to present any significant ecological problems.

13. DISPOSAL INFORMATION

Waste disposal : This product is not regarded as hazardous waste.
: Dispose in accordance with local regulations.

Recycling: : This product may be recycled either back into film, or into other suitable applications.
: Please consult your local GE Plastics sales office for advice.

14. TRANSPORTATION INFORMATION

General : This product is not subject to transport regulations.

15. REGULATORY INFORMATION

This product is not considered dangerous under EC Directives 67/548/EEC and 88/379/EEC, as amended.

This MSDS has been prepared in accordance with EU Directive 91/155/EEC, as amended by 93/112/EC.

16. OTHER

This publication provides information and guidelines for safe handling and cutting of GE Plastic's film and is based on currently available experience and knowledge. It is not designed as a comprehensive product performance data sheet, nor as a guide to application possibilities of our materials.

Users should follow all applicable local regulations governing Health and Safety at work, and are requested to pass this publication on to all relevant employees and customers.

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