



FOOD GRADE STATEMENT

EDISTIR N 1840, N 1910, N 2380, N 2560, N 2982, N 1782 cri.

Our mentioned products, as supplied in original packaging, comply by composition with the regulations currently in force for plastic materials intended to come into contact with foodstuffs in the following Countries:

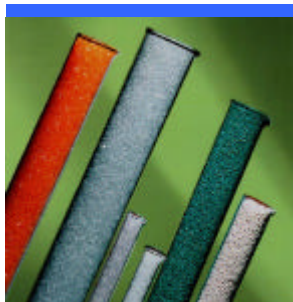
- **Italy:** D.M. 21.03.73 "Disciplina igienica degli imballaggi, recipienti, utensili destinati a venire a contatto con le sostanze alimentari e le sostanze d'uso personale" and following amendments.
- **Germany:** Bedarfsgegenständeverordnung 13.07.2005 and following amendments. BfR IX "Farbmittel zum Einfärben von Kunststoffen und anderen Polymeren für Bedarfsgegenstände".
- **France:** Applicable regulations published in the Brochure N°1227. Arrêté du 02.01.2003 "Matériaux et objets en matière plastique mis ou destinés à être mis au contact des denrées, produits et boissons alimentaires" and following amendments.
- **The Netherland:** Verpakkingen en Gebruikaartikelen Besluit (Warenwet) 21/08/1991 and foll. am.
- **Belgium:** Arrêté Royal 11 Mai 1992 "Materiaux et object destines a entrer en contact avec les denrées alimentaires" and following amendments.
- **United Kingdom:** Statutory Instrument 2002, No. 2364 "The Plastic Materials and Articles in Contact with Food, Regulations 2002" and following amendments.
- **Spain:** Real Decreto 118/2003 of 31.01.2003 and following amendments.
- **Switzerland:** SR 817.041.1 "Ordinanza del Dipartimento Federale dell'Interno sui materiali e oggetti in materia plastica" dated 23.11.2005 and following adaptations.
- **USA:** Code of Federal Regulations, Food and Drug Administration (FDA) Title 21 §177.1640 (Styrene polymers). A colourant, contained at a level of few parts per millions the a.m. materials, is not listed in Title 21 parts 170-199.
- **EU:** Directive 2002/72/EC "Plastic materials intended to come into contact with foodstuffs" and following amendments (2004/1/EC, 2004/19/EC, 2005/79/EC, 2007/19/EC, 2008/39/EC).

The mentioned products contain additives with a restriction (specific migration limit - SML) in the EU directives.

The products do not contain substances authorized as flavourings, nor as direct food additives with restrictions in the applicable EC directives.

We point out that it is a responsibility of the end users to ensure that materials and articles, manufactured with good manufacturing practice (Commission Regulation (EC) 2023/2006), under their normal or foreseeable conditions of use, do not transfer their constituents to foodstuffs in quantities which could endanger human health and/or bring unacceptable changes in the composition of the foodstuffs or a deterioration in the organoleptic properties (Regulation (EC) No 1935/2004).

Standards and Product Certification
Salvatore Minardi



Edistir[®]
Polystyrene

N 1910

TECHNICAL DATA SHEET

Product description

Very easy flow general purpose polystyrene.

Used for injection of thin-wall, multi-cavity, very fast-cycle mouldings and for sheet extrusion in glossy capping of HIPS and in blend with HIPS or clear SBS.

Designation: Thermoplastics ISO 1622-PS,G,085-20

Applications

Typical uses include cups, packaging containers for foods and cosmetics, toys, medical articles.

Thanks to its high flow it is particularly suitable as carrier for master batches.

Typical processing data

Injection moulding: • predrying normally not required
• melt temperature 200-250°C
• mould temperature 10-50°C

Extrusion: • melt temperature 210-240°C

General information

N 1910 is certified UL94 HB "all colors" at 1.5 mm (UL file E83071).

This grade in its natural version complies by composition with the requirements set by the main Regulations for plastic materials intended for food contact (including the EEC Directive 90/128 and subsequent amendments).

Properties	Test conditions	Test methods	Units	Values
General				
Density		ISO 1183	g/cm³	1.05
Bulk density		ISO 60	g/cm³	0.65
Water absorption	24 h - 23°C	ISO 62	%	<0.1
Rheological				
Melt flow rate	200°C - 5 kg	ISO 1133	g/10 min	27
Mechanical				
Tensile stress at yield	5 mm/min	ISO 527	MPa	-
Tensile stress at break	5 mm/min	ISO 527	MPa	37
Tensile strain at break	5 mm/min	ISO 527	%	1.3
Tensile modulus	1 mm/min	ISO 527	MPa	3200
Flexural strength	2 mm/min	ISO 178	MPa	67
Izod impact strength, notched	+23°C - thickness 3.2 mm	ISO 180/4A	J/m	-
	+23°C - thickness 4 mm	ISO 180/1A	kJ/m²	1.7
	-30°C - thickness 4 mm	ISO 180/1A	kJ/m²	1.5
Rockwell hardness	L/M scale	ISO 2039/2	-	M80
Thermal				
Vicat softening temperature	10 N - 50°C/h	ISO 306/A	°C	89
	50 N - 50°C/h	ISO 306/B	°C	83
Deflection temperature under load (annealed)	1.8 MPa - 120°C/h	ASTM D 648	°C	82
Coefficient of linear thermal expansion		ASTM D 696	10 ⁻⁵ /°C	7
Thermal conductivity		ISO 8302	W/(K·m)	0.17
Moulding shrinkage		internal method	%	0.3 - 0.6
Flammability				
Flame behaviour	thickness 1.5 mm	UL 94	class	HB
Glow wire test (GWT)	thickness 1.6 mm	IEC 60695-2-1	°C	650
Electrical				
Surface resistivity		IEC 60093	ohm	>1.5·10E+15
Volume resistivity		IEC 60093	ohm-cm	>7·10E+15
Comparative tracking index (CTI)	solution A	IEC 60112	-	375
Dielectric strength		IEC 60243	kV/mm	70
Dielectric constant (relative permittivity)	50 Hz	IEC 60250	-	2.5
Dissipation factor	50 Hz	IEC 60250	-	2·10E-4

Issue 01/02

All indicated data refer to natural grades.

The data, information and suggestions are provided for guidance purposes only.

The Company accepts no responsibility for the results obtained therefrom, as neither for their utilization in infringement of possible patent rights.

However the Company will provide the guaranteed values for each product on demand.

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S.D.S. N°: 2e

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February 2008

SAFETY DATA SHEET

1. IDENTIFICATION OF THE PREPARATION AND THE COMPANY / UNDERTAKING

1.1 Identification of the preparation.

Chemical name : Polystyrene (GPPS).

Designation or trade name : **EDISTIR® Normal Grades**

1.2 Use of the preparation

Production of various plastic final applications.

1.3 Identification of the company / undertaking

Responsible for placing on the EU market:

POLIMERI EUROPA SpA

Piazza Boldrini, 1 - 20097 S. Donato Milanese (MI), Italy
telephone N°: +39 2 520 1

E-mail address of the competent person responsible for the SDS:
SDS.PE@polimerieuropa.com

1.4 Emergency calls

Telephone N°: + 39 0376 305615

2. HAZARDS IDENTIFICATION

- Classification

This product is not classified as dangerous according to Directive 1999/45 and following amendments.

- Critical hazards to man:

The preparation is not hazardous in the form in which it is placed on the market and under the normal and recommended conditions of storage and use. The preparation is not dangerous according to the criteria set by the European Union. See also chapters 4 and 11.

- Critical hazards to the environment

The preparation is stable under normal conditions of storage and use. It is not hazardous to the environment in its normal state.

Decoding:

(#) = Information has been updated at the revision date

N.Av.= Not available (or: impossible)

N.Ap.= Not applicable

3 . COMPOSITION / INFORMATION ON INGREDIENTS

The preparation is essentially made of:

POLYSTYRENE (PS)

CAS name: POLYSTYRENE

CAS # 9003-53-6

4 . FIRST-AID MEASURES

- Symptoms, effects, indication for immediate action

• Inhalation

Symptoms	: (dust or gas/vapours released by heat) irritation of the respiratory organs.
Expected delayed effects	: N.Ap.
First aid actions	: move the affected person away from the contaminated area into fresh air; seek medical assistance.

• Contact with skin

Symptoms	: dust can irritate skin. No effect expected by contact with the polymer at room temperature. Molten product causes burns.
Expected delayed effects	: N.Ap.
First aid actions	: wash with plenty of water. In case of contact with melted material, cool down with cold water and seek medical assistance. Do not remove the product that solidified on skin. Treat as a burn.

• Contact with eyes

Symptoms	: (dust or gas/vapours released by heat) dust can redden eyes.
Expected delayed effects	: N.Ap.
First aid actions	: wash with plenty of water. If irritation persists, seek medical assistance.

• Ingestion

Symptoms	: abdominal pain.
Expected delayed effects	: N.Ap.
First aid actions	: no specific measure requested in case of ingestion. If needed seek medical assistance.

- Specific and immediate treatment means to be available at the workplace: eye wash fountains.

5 . FIRE-FIGHTING MEASURES

- Suitable extinguishing media:

Water, water spray, foam, dry chemicals, carbon dioxide.

Cool down the containers using water spray.

- Extinguishing media which must not be used for safety reasons: N.Ap.



- Special exposure hazards arising from preparation itself, combustion products, resulting gases:

The preparation, when involved in a fire, burns with a sooty flame and release fumes made up of water, carbon dioxide, carbon monoxide (when starved of oxygen) and other combustion products. Overheating/pyrolysis evolves vapours made up of monomers, low molecular weight polymers and their oxidation products.

- Special protective equipment for fire-fighters:

Wear suitable protective clothing (helmet, goggles, fire resistant gloves, boots) and protect respiratory organs (self contained breathing apparatus).

6 . ACCIDENTAL RELEASE MEASURES

- **Personal precautions:** Do not walk on granules to avoid slipping.
- **Environmental precautions:** Keep away from drains.
- **Methods for cleaning:** Collect mechanically. Reuse if possible or dispose of as required by national and local regulations (see section 13).

7 . HANDLING AND STORAGE

7.1 - Handling

- Safety precautions

Recommended equipment and procedures:

In normal conditions masks with antidust filters should be available for use when requested.

7.2 - Storage

- Safety conditions

Avoid storage in the open under direct sunlight.

Keep away from sources of ignition, heat and sparks and from flammable products.

In storage and working areas avoid pellets spilling as a possible cause of slipping.

Take precautionary measures against static discharges; earth all storage silos.

Product should be stored in a safe manner, to avoid danger from unstable or damaged packaging units (octabins/bags/boxes on pallet). In particular, stacking of packaged units can be dangerous to warehouse personnel.

7.3 – Specific uses

Recommendations: N.Ap.

8 . EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Exposure limit values

A) Occupational:

Threshold limit values ACGIH (Tab. 2007)*

	TWA (ppm; mg/m ³)	STEL / C (ppm; mg/m ³)
residual monomer:		
Styrene	20 ppm, A4	40 ppm, A4
other substances:		



	TWA (ppm; mg/m ³)	STEL / C (ppm; mg/m ³)
Particulate not otherwise specified (inhalable)	10 mg/m ³	--

*Or statutory limit values in the country concerned.

A4 : Not Classifiable as a Human Carcinogen

B) Medical:

- **Recommended monitoring procedures:** As required by the rules and regulations of each country.

8.2 Exposure control

- Occupational exposure control:

Traces of monomers and other volatile substances may be given off during processing, particularly at unusually high processing temperatures.

Work rooms must be provided with adequate ventilation and exhaust equipment to collect dust and gas/vapours that may be evolved during the conversion.

- Equipment to provide adequate and personal protection:

Respiratory protection: In normal conditions masks with antidust filters should be available for use when requested.

Hand protection: chemical substance resistant gloves. Breakthrough time of the glove material: see producer's data.

Eye protection: not necessary when no powders or vapours are present. Where present, wear suitable protective glasses.

Skin protection: standard work clothes.

9 . PHYSICAL AND CHEMICAL PROPERTIES

- Appearance

physical state at 23 °C : solid (pellets 3mm diameter and length)
 Colour : transparent bluish or according to request

- Odour : none

- Density : 1050 kg/m³

- Bulk density : ~ 650 Kg/m³

- Softening temperature : 94-103 °C (Vicat ISO 306/A)

- Autoflammability : > 450 °C

- Decomposition temperature : > 300 °C

- Solubility in water : insoluble

- Solubility with other solvents : soluble in chlorinated solvents, aromatic solvents, ketones

- Lower calorific value : ca. 10,000 kcal/kg

10. STABILITY AND REACTIVITY

The preparation is stable and inert in the recommended storage and handling conditions (see section 7).



- Conditions/Materials to avoid:

Exposure to sunlight and/or heat. Accumulation of electrostatic charges. Oxidising substances.

- Hazardous decomposition products: See section 5.

Follow the recommended processing conditions to avoid formation of noxious gases and vapours.

11 . TOXICOLOGICAL INFORMATION

Specific information on the preparation is not available in the literature. Residual monomers are present in the product at trace levels, hindered in the polymer matrix and therefore not available in normal conditions.

- Dangerous effects from exposure to the preparation:

The possible dusts may cause irritation to the eyes and/or respiratory organs.

The polymer does not present any intrinsic health hazard when processed according to correct working procedures.

- Delayed and immediate effects from short and long term exposure:

Carcinogenicity, mutagenicity, reproductive toxicity: no evidence of these effects has been reported for the preparation.

12 . ECOLOGICAL INFORMATION

- Ecotoxicity

The preparation is essentially a high molecular weight polymer, not regarded as ecotoxic.

- Mobility

Use according to good working practice, and avoid releasing the product into the environment.

- Persistence and degradability

The preparation is not a biodegradable polymer.

13 . DISPOSAL CONSIDERATIONS

- Description and handling of residues: The same safety consideration apply to scraps/waste as apply to the preparation.

- Appropriate methods of disposal of preparation:

Residues should be disposed of as required by national and local regulations.

• **Incineration**

Must be done under approved conditions, possibly with energy recovery and only at suitable facilities equipped with a scrubber for the treatment of fumes before their release into the atmosphere.

• **Recycling**

After suitable treatment (cleaning, grinding, etc.), the preparation can be safely re-used, as is or mixed with fresh material, when this is compatible with the intended final application.

• **Landfilling**

Should be avoided as far as possible. If unavoidable, use approved landfill sites.



- National and Community provisions relating to waste:

Directive 91/156/EEC of 18 March 1991; Directive 91/689/EEC of 12 December 1991; Directive 94/62/EEC of 20 December 1994.

14 . TRANSPORT INFORMATION

The preparation is not classified as dangerous for transportation according to the following regulations: ADR/RID, IMO, IATA.

15 . REGULATORY INFORMATION

- Information on classification and labelling:

The preparation is not dangerous according to the Directive 1999/45/EC.

Label not required.

16 . OTHER INFORMATION

This safety data sheet has been drawn up according to the requirements of Regulation 1907/2006/EC.

Data and information contained in this Safety Data Sheet are based on our available knowledge at the last revision date. No guarantee can be given as to the sufficiency of any safety measures contained in this Safety Data Sheet, nor can it be assumed that other or additional measures may not be required under particular or exceptional circumstances. The user must make sure of the fitness and completeness of the information, according to the specific use he wants to do.