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# Polystyrene Compounds

Grades and typical  
applications

**TOTAL PETROCHEMICALS**



**TOTAL**

# General Information

## Standard properties

All tests are carried out at 23°C unless otherwise stated. Mechanical properties are measured on injection moulded test specimens.

## Mould shrinkage

Shrinkage of Total Petrochemicals Polystyrene is 0.4 - 0.7%.

## Bulk Density

Bulk density of all natural grades is approximately 0.6 g/cm<sup>3</sup>.

## Internet

All of the properties of the grades, in addition to processing data, can be found on our web site : [www.totalpetrochemicals.com](http://www.totalpetrochemicals.com)



# Total Petrochemicals and the Flame Retardant Polystyrene

The Total Petrochemicals range of Flame Retardant Polystyrene grades consists of a complete portfolio of materials designed to meet the current safety and environmental requirements of the consumer electronics sector. Based on a long experience of supplying Polystyrene materials to the television industry, Total Petrochemicals has developed a complete range of Polystyrene grades for this important application area.

All products are formulated to allow finished parts to comply with Directive 2002/95/EC (on the restriction of the use of certain hazardous substances in electrical and electronic equipment) and amendments. This contributes significantly to the safety of electronic equipment and thus, indirectly, can be used to improve safety at home; this with respect to all current environmental considerations in line with sustainable development policy.



## Total Petrochemicals

### a Petrochemicals World Major

The world's fifth largest petrochemicals producer, Total Petrochemicals consolidates the petrochemicals activities of the Total Group : base chemicals and their related commodity polymers (polyethylene, polypropylene and polystyrene).

With over 7,000 employees, Total Petrochemicals conducts its operations in Europe, the United States, the Middle East and Asia. Its products serve a vast number of consumer and industrial markets, including packaging, construction and automotive.

As part of the Total Group, Total Petrochemicals draws on strong synergies with its refining activity, particularly in Europe and the United States, and with its exploration and production activity, especially in the Middle East where the Company is now a major ethylene producer using ethane feedstock.

Information contained in this publication is true and accurate at the time of publication and to the best of our knowledge. The nominal values stated herein are obtained using laboratory test specimens. Before using one of the products mentioned herein, customers and other users should take all care in determining the suitability of such product for the intended use, and particularly the conformity with current regulations. Total Petrochemicals do not recommend its polystyrene resins for use in any application in direct or indirect contact with human body fluids and tissues. The Companies within Total Petrochemicals do not accept any liability whatsoever arising from the use of this information or the use, application or processing of any product described herein. No information contained in this publication can be considered as a suggestion to infringe patents. The Companies disclaim any liability that may be claimed for infringement or alleged infringement of patents.

## Halogen free Compounds

Typical Applications				References	Properties *				
Consumer Electronics	Electrical Appliances	Office Automation	Electronics packaging		Flame Retardant Properties	Melt Flow Index	Density	Vicat Temperature	IZOD Impact Strength
					Units	Class	g/10 min	g/cm <sup>3</sup>	°C (5kg)
				Test Method	ISO	1133 H	1183	306B50	180/1 A
				ASTM	UL 94	D-1238	D-792	D-1525	D-256
•		•		FT 875	V1 @ 2.5 mm	4	1.08	90	6
•		•		FT 876	V0 @ 2.5 mm	3	1.1	85	6
•				FT 878	V0 @ 2.5 mm	3	1.1	90	6
•		•		853	V2 @ 1.6 mm	5	1.06	81	7
•		•		855 HV	V1 @ 3.0 mm	5	1.07	87	6
•				856	V0 @ 3.0 mm	4	1.1	81	7

## Brominated “non-deca” Compounds

Typical Applications				References	Properties *				
Consumer Electronics	Electrical Appliances	Office Automation	Electronics packaging		Flame Retardant Properties	Melt Flow Index	Density	Vicat Temperature	IZOD Impact Strength
					Units	Class	g/10 min	g/cm <sup>3</sup>	°C (5kg)
				Test Method	ISO	1133 H	1183	306B50	180/1 A
				ASTM	UL 94	D-1238	D-792	D-1525	D-256
•	•	•		801	V0 @ 1.6 mm	5	1.09	87	8
	•			807	V2 @ 1.6 mm	10	1.04	88	7
•	•			818	V0 @ 2.0 mm	10	1.13	85	8
•	•	•		820	V2 @ 1.6 mm	14	1.09	87	7.5
	•			827		6	1.04	90	7

## Alloys

Typical Applications				References	Properties *				
Consumer Electronics	Electrical Appliances	Office Automation	Electronics packaging		Melt Flow Index	Density	Vicat Temperature		IZOD Impact Strength (23/ -30°C)
					Units	g/10 min	g/cm <sup>3</sup>	°C (1kg)	°C (5kg)
				Test Method	ISO	1133 H	1183	306A50	306B50
				ASTM	D-1238	D-792	D-1525	D-1525	D-256
			•	9217	4	1.02	101	76	40/20

Tensile Yield Strength	Elongation at break	Flexural Modulus	General Information
MPa	%	MPa	
527-2	527-2	178	
D-638	D-638	D-790	
30	40	2400	Typical application LCD TV cabinets
44	30	2300	Typical application LCD TV cabinets
45	30	2300	Typical application LCD TV cabinets
32	40	2500	V2 with very low combustion time. Typical applications : TV cabinets, printers cartridges
32	40	2400	No dripping. Specially designed for TV cabinets
35	40	2300	Typical application TV cabinets

Tensile Yield Strength	Elongation at break	Flexural Modulus	General Information
MPa	%	MPa	
527-2	527-2	178	
D-638	D-638	D-790	
24	40	2300	Suitable for UL 94 5VB @ 2.5mm
27	39	2400	Suitable for Hot Glow Wire Test at 960°C. Typical application : fuse boxes
25	40	2300	Fluid grade for flat Tv covers and electric and electronic appliances
24	45	2400	Typical applications : covers for electrical equipment, internal enclosures for office automation, toners cartridges
27	39	2400	Suitable for Hot Glow Wire Test at 750°C. Typical application: fuse boxes

Tensile Strength at break	Elongation at break	Flexural Modulus	General Information
MPa	%	MPa	
527-2	527-2	178	
D-638	D-638	D-790	
22	80	1450	Base polymer for conductive polystyrene compounds.



## Marketing and Sales

TOTAL PETROCHEMICALS  
a division of sa PetroFina nv  
rue de l'Industrie, 52, Nijverheidsstraat  
B-1040 Brussels - Belgium  
Phone : +32 (0) 2 288 91 11  
Fax : +32 (0) 2 288 35 36

## Research and Development

TOTAL PETROCHEMICALS U.K.  
Globe House, Bayley Street - Gate 1  
SK 15 1PY - Stalybridge, Cheshire  
United Kingdom  
Phone : +44 (0) 161 33 84 411  
Fax : +44 (0) 161 33 88 487

## Technical Assistance

TOTAL PETROCHEMICALS FRANCE  
Pôle Recherche et Développement Mont/Lacq  
BP 47  
F-64170 Lacq - France  
Phone : +33 (0) 5 59 67 38 50  
Fax : +33 (0) 5 59 67 37 90

 : [polystyrene@total.com](mailto:polystyrene@total.com)

 : [www.totalpetrochemicals.com](http://www.totalpetrochemicals.com)