

Non bromine • Non phosphate • Transparent
flame retardant Polycarbonate

Panlite® MN-4800 series

Technical data sheet

Teijin Chemicals Ltd.
Plastics Technical Center

1. Introduction

Panlite® MN-4800 Series are non-brominated non-phosphorus transparent flame retardant polycarbonate.

2. Characteristics

- Good flame retardancy
UL94 1.5mm V-0 equivalent.
- Environmental friendly
Do not contain any brominated or phosphorus flame retardant.
- Excellent optical properties
It have the same transparency as general purpose polycarbonate.
- Excellent thermal resistancy
It have almost same thermal resistancy as general purpose polycarbonate.

3. Lineup

	Grade	Flammability (UL94)	Application
Flame retardant high flow grade	MN-4800	1.5mm V-0 (Equivalent)	Injection molding
Flame retardant high flow UV resistance grade	MN-4800Z	1.5mm V-0 (Equivalent)	Injection molding
5VA flame retardant UV resistance grade	MN-4805Z	1.5mm V-0 (Equivalent) 3.2mm 5VA (Equivalent)	Extrusion molding Injection molding

4. Data sheet

Property	Unit	Test method	Condition	MN - 4800	MN - 4800Z	MN - 4805Z
Density	kg/m ³	ISO1183	-	1,200	1,200	1,200
MVR	cm ³ /10min	ISO1133	300 Load:1.2kgf	7	7	1
Tensile yield stress	MPa	ISO527-1	50mm/min	67	67	67
Tensile yield distortion	%	ISO527-2		6	6	7
Nominal tensile strain at break	%	ISO527-1 ISO527-2	50mm/min	> 50	> 50	> 50
Flexural strength	MPa	ISO178	2mm/min	101	101	100
Flexural modulus				2,440	2,440	2,400
Charpy impact strength	kJ/m ²	ISO179	Notched	10	9	14
			unnotched	NB	NB	NB
Load deflection temperature		ISO75-1 ISO75-2	1.80MPa	122	119	127
Mold shrinkage	%	In-house method	Parallel(4mmt)	0.5 ~ 0.7	0.5 ~ 0.7	0.5 ~ 0.7
			Vertical(4mmt)	0.5 ~ 0.7	0.5 ~ 0.7	0.5 ~ 0.7
Flammability	-	UL94	1.5 mm	V-0 (Equivalent)	V-0 (Equivalent)	V-0 (Equivalent)
			3.0 mm	V-0 (Equivalent)	V-0 (Equivalent)	V-0 (Equivalent)
			3.2 mm	-	-	5VA (Equivalent)
Light transmission	%	ASTM D1003	2mm	89	89	89
Haze	%	ASTM D1003	2mm	0.5	0.5	1.0

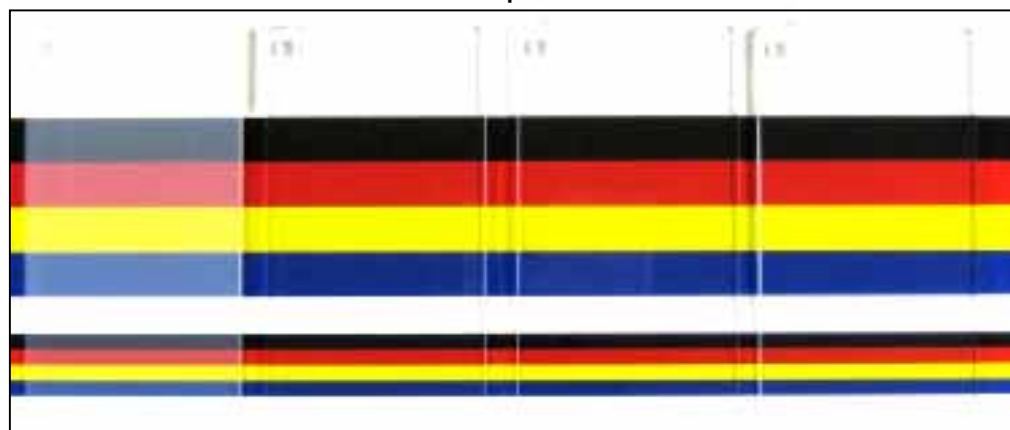
* The values listed are specification values, not certified values.

5. Optical properties

Light transmission rate , Haze

Test method : ASTM D 1003
 Instrument : HR-100 (Murakami Color Research Laboratory)
 Thickness : 2mm

《 Sample 》



LN-2540 **MN-4800** **MN-4800Z** **MN-4805Z**
 (Existing transparent FR PC)

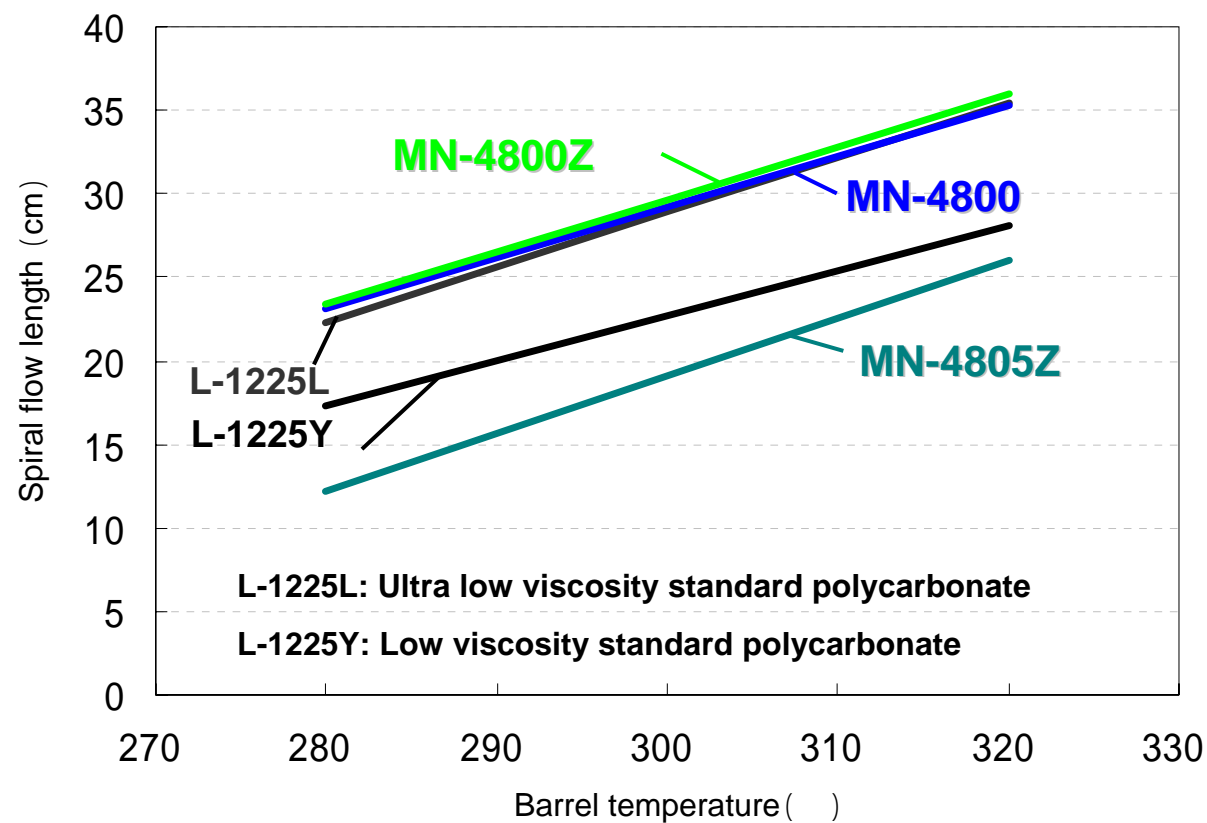
Item	Unit	Existing grade	New grades		
		LN-2540	MN-4800	MN-4800Z	MN-4805Z
Light transmission	%	83	89	89	89
Haze	%	33	0.5	0.5	1.0

6. Flow

Spiral flow length comparison data with general purpose polycarbonate

Molding condition

Injection machine : Sumitomo heavy industries, Ltd. SG-150U
 Barrel temperature : 280 ~ 320
 Mold temperature : 80
 Flow path thickness : 2mmt
 Injection pressure : 98.1MPa



7. Molding condition

(1) Pre-drying condition

In case using box type hot blast drying machine, the thickness of the pellet layer should be 3cm or less. Set temperature at 120 in the drying machine, then keep pellets for 5 ~ 8 hours. The hopper of the molding machine should be heated to maintain the pellet temperature at 120 to avoid moisture absorption. If pre-drying is not enough, material degradation may happen.

(2) Molding conditions

Panlite® MN-4800 series typical injection and extrusion molding conditions are as follows:

MN-4800 series injection molding condition		MN-4805Z extrusion molding condition	
Barrel temperature	270 ~ 320	Barrel temperature	270 ~ 320
Mold temperature	80 ~ 120	Die temperature	270 ~ 320
Screw revolution speed	40 ~ 100rpm	Screw revolution speed	20 ~ 100rpm
Injection pressure	98.1MPa ~ 147.1MPa	Back pressure	5MPa ~ 30MPa
Back pressure	~ 10MPa	Roller temperature	110 ~ 135

CAUTION

The figures listed in this catalogue are typical values obtained under standard test methods, and may not be applicable for products that are used under different application conditions.

The combustion figures listed in this catalogue are from small-scale tests and may not be applicable for hazards during a major fire. These grades cannot be used for food container and food packing applications. Please call us for advice regarding applications for medical equipment and toys.

When any kind of additives (such as anti-bacterial agents, stabilizers and flame retardants) or coloring agents are to be added to this resin, please be sure to consult with Teijin Chemicals Ltd., in advance. However, even after consultation, Teijin Chemicals Ltd., will not guarantee nor bear responsibility in any form for the usage of such additives.

Please carefully consider all potential industrial property rights when considering applications introduced in this catalogue.

The contents of this catalogue may be changed without prior notice.

Please refer to the Material Safety Data Sheet (MSDS) before use for other warnings in detail.