

KANEKA EPERAN™ -PP MH grades

100% halogen-free flame retardant particle foam



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KANEKA Eperan™-PP MH is a 100% halogen-free flame retardant expanded polypropylene with unique properties. It offers the properties of a closed cell particle foam, like light weight, high structural strength, durability and resilience combined with self extinguishing ability.

KANEKA's flame retardant material is available in two grades:



Grade	Eperan™-PP MH35	Eperan™-PP MH24
Bulk density (g/l)	21,0 ± 1,5	36,0 ± 2,5
Molded density (g/l)	25 - 40	42 - 65
Colour	Grey	Grey

Applications

The excellent flame retardant behavior of KANEKA Eperan™-PP MH allows its introduction in various markets. Furthermore, it has been particularly designed as a heat resistant and UV stable material to provide good performance in very demanding applications like:

- Interior, exterior and under the hood automotive applications
- Electrical Vehicles
- Public transport
- Aviation
- HVAC
- Building and Construction
- Electrical appliances
- Outdoor applications



Eperan flame retardant particles used in HVAC

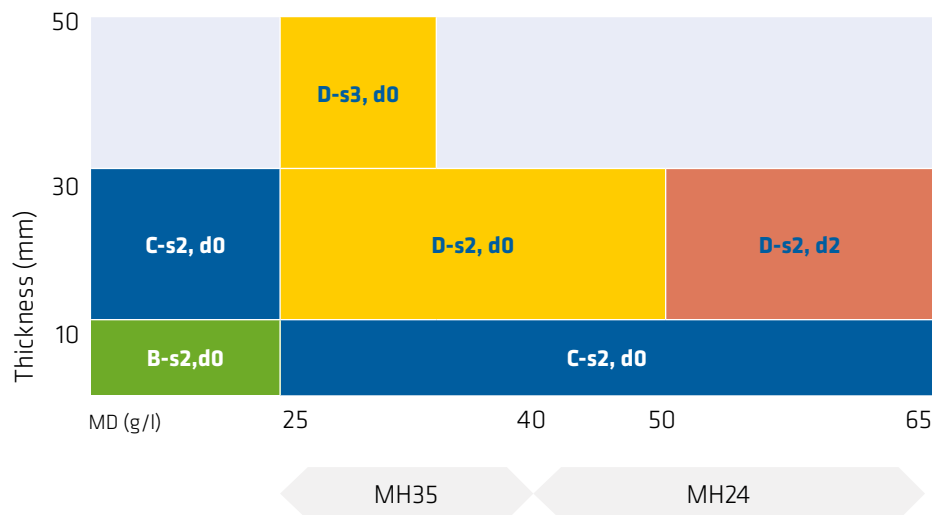
Properties

Flame Retardancy

The Eperan™-PP MH is compliant with different flame retardancy regulations, depending on the market served:

Market	Standard / Method	MH performance
Electrical appliances	UL94 Horizontal burning test for foamed materials	HF-1 3-13 mm
Automotive	Burning rate < 102 mm/min FMVSS 302 - ISO 3795	0 mm/s
Buses	Dripping of interior parts UN/ECE/324 Reg 118	PASS
Railway	Heat Release Test (ISO 5660-1) Smoke Density & Toxicity test (ISO 5659-2)	PASS PASS
Aviation	Vertical Flammability Test Smoke Density & Toxicity Test Heat Release Test	PASS PASS PASS
Building & Construction	Fire classification (EN 13501)	From B-s2,d0 to D-s2,d2*
	Ignitibility test (DIN4102-1)	B2

Please consult the available technical dossier of the specific grade for the exact conditions and performance



* EN 13501 Fire Classification

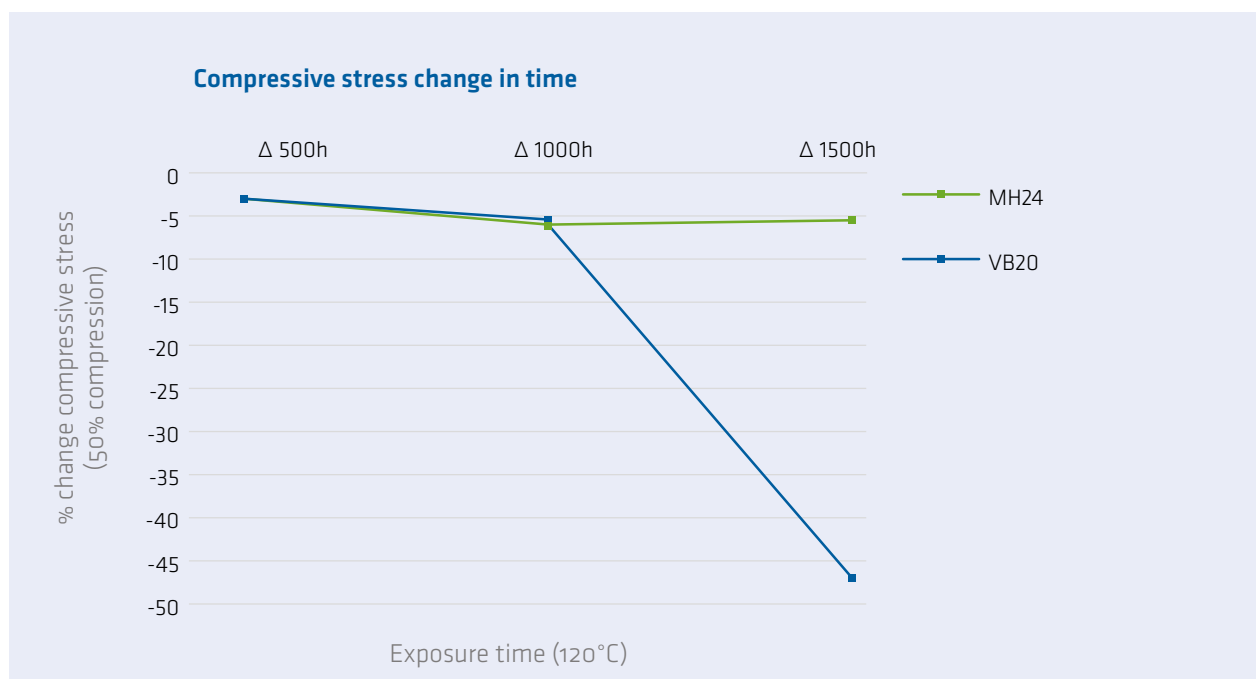
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Heat Resistance

Compared to standard black expanded polypropylene like Eperan™-PP VB20, the KANEKA Eperan™-PP MH has an outstanding heat resistance at temperatures up to 120°C.

Property	Unit	Method	1500h at 120°C	
			VB20 - 60 g/l	MH24 - 60g/l
Moulded density	g/l	ISO 845 : 1988	VB20 - 60 g/l	MH24 - 60g/l
Dimensional stability	%	EN 1604 : 2013	-0,9	-1,3
Weight change	%	-	-0,4	-0,7
Compressive stress change at 50% strain	%	ISO 844 : 2007 At 5 mm/min	-45	-6



Change in compressive stress after 1500h exposure at 120°C

UV Resistance

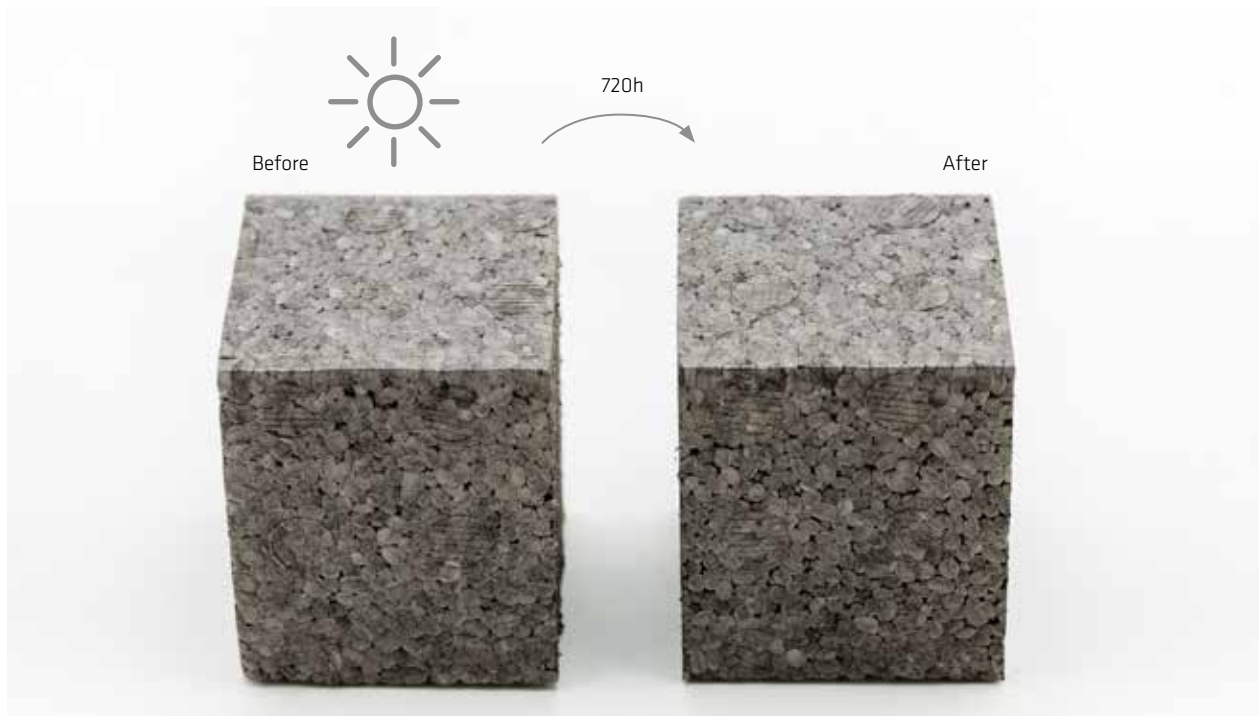
Stability after UV exposure is of main importance for several applications like outdoor applications. KANEKA Eperan-PP MH shows superior UV stability compared to standard black grades of Eperan™-PP.

UV Resistance was tested in accordance with the industry standard SAE J2412 “Accelerated Exposure of Automotive Interior Trim Components Using a controlled Irradiance Xenon-Arc Apparatus”

Property change in performance after 720hrs exposure	Δ Dimensions & weight (%)	Δ Compr. Stress At 50% strain (%)	Δ Tensile strength (%)	Δ E ⁽¹⁾
Black Eperan-PP - 40g/l	0,2	-2,6	-7,5	4,1 ⁽²⁾
Black Eperan-PP - 70g/l	0,1	0,5	-2,6	2,7 ⁽²⁾
Eperan-PP MH - 55 g/l	0,05	-0,3	+5,6	0,5

(1) A change in color is visible by the human eye when $\Delta E \geq 2,3$

(2) Material surface is less glossy and is dusty



No visible color change after 720h exposure to UV

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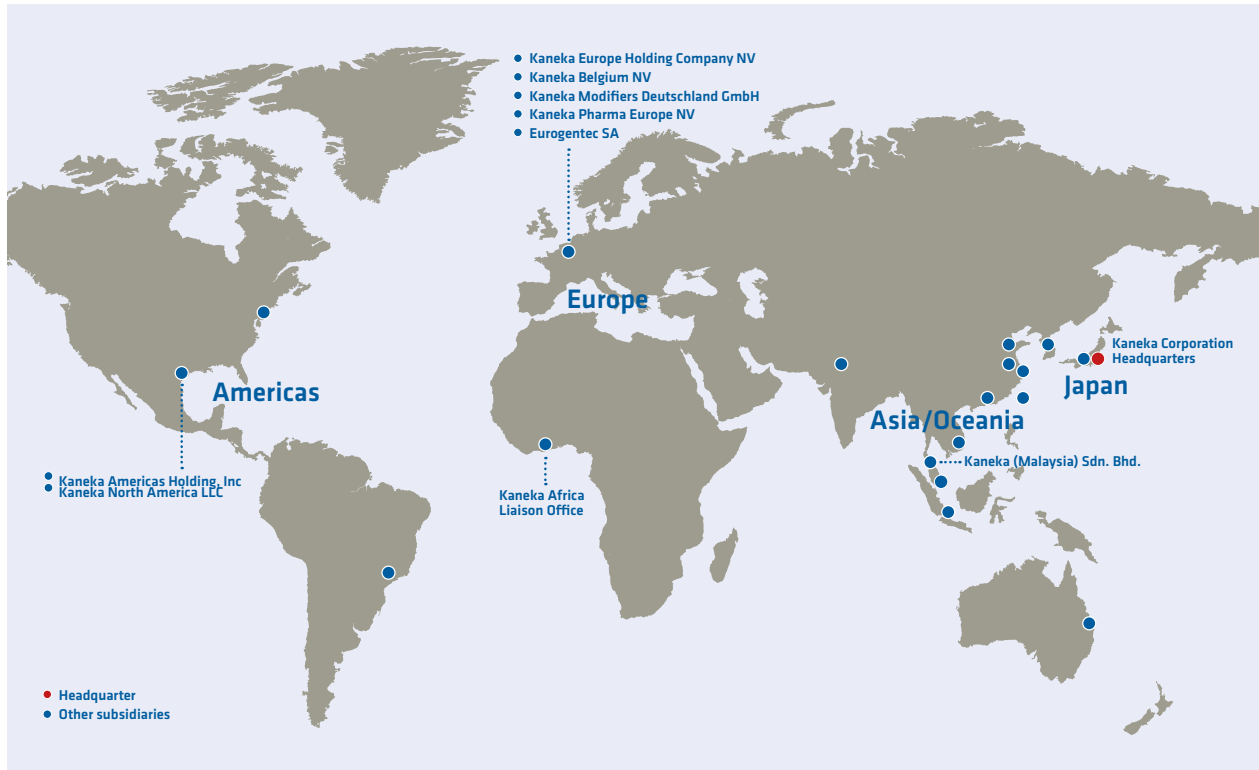
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Physical properties of molded parts

Property	Units	Value			Test Method
Molded density	g/l	25	42	65	ISO 845 : 2006
Compressive stress at 10% strain at 25% strain at 50% strain at 75% strain	kPa	70 100 165 385	180 220 305 650	320 380 495 1005	ISO 844 / 2007 at 5 mm/min
Compression set 25 % / 23 °C / 22 h 50 % / 23 °C / 22 h	%	10 27	7 24	7 22	ISO 1856 : 2000 24 h after stress re- lease 24 h after stress release
Creep (at 23 °C) of 5 % after 28 days	kPa	22	60	144	ISO 7850 : 1986
Cushioning factor C (at 60 % strain)	-	2,3	2,2	2,3	
Tensile strength	kPa	410	655	980	ISO 1926 : 2009 Dumbell 2
Elongation at break	%	22	22	22	@500 mm/min
Water absorption 1 day 7 days 28 days	Vol %	< 1,0 < 4,0 < 5,0	< 1,0 < 4,0 < 5,0	< 1,0 < 4,0 < 5,0	DIN 53 428 : 2017
Thermal Conductivity	W/mK	0,037	0,039	0,043	EN 12667 : 2001

For more information regarding the technical properties of the KANEKA Eperan™-PP MH, please look at our technical dossier or contact our Technical Service Expert.

Kaneka in the world





The Dreamology Company
—Make your dreams come true—


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