



# HYBTONITE® CAR 201

## CNT modified epoxies and CNT modified pastes for all epoxy systems

The systems are low viscosity solvent free 100 % reactive CNT modified epoxy systems tailor-made for the composites industry. It is suitable for RTM, filament winding, laminating, pultrusion, infusion and many other applications.

The systems are made with patented HYBTONITE® technology. These systems can be tailor-made with different curing agents and accelerators to meet required cure rate, pot life and properties.

These systems will give increased impact resistance, elongation to break and fatigue compared to any traditional epoxies.



TABLE 1: Process data

Before mixing	Mixing and processing	Curing
Clear the surface from dust, grease and moisture.	Mix the resin with curing agent properly for minimum 1–2 min.	The product cured even at + 5 °C but higher temperatures give better properties.
The higher the temperature of the object, the better flow and wetting are achieved.	Let the air come out and settle for minimum 2–5 min (even vacuum if possible).	Heat cure range is from 6 hours at 60 °C to 5 minutes at 200 °C.
If possible preheat the HYBTONITE® resin component to 40 °C before use or use vacuum for air release.	For the best results, consult with Amroy Europe Oy.	

### Vertical surfaces in hand laminating:

The system can be thickened with 2 % HDK / Aerosil for laminating vertical surfaces. This helps especially against sagging/drainage. Also available in all RAL colours.

The system does not crystallize and has a long storage stability of at least 3 years when properly stored in closed containers.

## HYBTONITE® CAR 201

**TABLE 2: Technical data cycloaliphatic CNT modified vacuum infusion / RTM epoxy system**

HYBTONITE® CAR 201	Amroy CA23	Amroy CA16	Amroy AA135
Mix ratio (by weight)	100:27	100:19	100:135
Mix Viscosity 25 °C , mPa•S	250	300	150
Mix Viscosity 40 °C, mPa•S	150	200	80
Density, kg/l	1,05	1,06	1,03
Colour	clear when cured / black, green in liquid		
Gel Time 25 °C (150 g)	2 hours	6 hours	12 hours
Gel time 60 °C	60 minutes	90 minutes	120 minutes
Min Cure Temperature, °C	120 °C	100 °C	100 °C
Heat Cure recommended	2 h 100 °C, 2 h 140 °C, 2 h 180 °C	2 h 100 °C, 2 h 140 °C, 2 h 190 °C	2 h 100 °C, 2 h 140 °C, 2 h 200 °C
Max Tg, °C	175 °C	185 °C	190 °C
Flexural / Compressive Modulus, GPa	3,3	3,4	3,2
Elongation at Break, %	6	7	5
On request also high Tg systems available up to + 200 °C.			

**TABLE 3: Viscosity temperature profiles at different injection temperatures for HYBTONITE® CAR 201**

Viscosity/temperature profile	25 °C	40 °C	60 °C
HYBTONITE® CAR 201	1500 mPa•S	700 mPa•S	400 mPa•S
CAR 201 + AA135	150 mPa•S	80 mPa•S	60 mPa•S
CAR 201 + CA23	250 mPa•S	150 mPa•S	100 mPa•S

### Storage Data

The products can be stored at temperatures between 0–60 °C in closed containers in dry place protected from direct sunlight. Storage time is at least 3 years.

**TABLE 4: Sales Packages**

Product/package	IBC	Drum	Can
HYBTONITE® CAR 100 / 201	1100 kgs	225 kgs	20 kgs
Amroy CA23 / AA135	900 kgs	180 kgs	18 kgs

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