CR Resin – Dual Action — Technical Data Sheet

Polymer filter resin for ammonia (NH_3) and formaldehyde (HCHO) · DOC CRP-TDS-001 · REV 2026-11d

Product CR Resin	**Type** Polymer filter resin	**Manufacturer** CRP-Int bv	**Origin** Arendonk, Belgium · EU

Parameter	Specification	Notes
Subject	**Polymer resin**	CR Resin proprietary formula
Grain size — standard	**2 – 6 mm**	Dust-free granules · air filters, cartridges and OEM filter beds · most used grade
Grain size — fine	**2 – 4 mm**	Compact cartridges, sachets and thin filter beds
Grain size — coarse	**4 – 10 mm**	Aquarium and industrial filters
Powder	**On request**	For impregnating carbon, filter pads and nonwovens
Bulk density	**≈ 400 – 450 g / L**	About 30% lighter than activated carbon per litre (≈610 g / L, CRP-Int test)
Pore volume	**270 cc / 100 g**	90% pore, 10% solid · activated carbon: 115 cc / 100 g
Volume per 100 g	**≈ 220 – 250 cc**	Activated carbon: 165 cc
Odour rating (Royal Haskoning)	**Formaldehyde 5/5 · ammonia 5/5**	Excellent; activated carbon 2/5 (moderate) for both · 62-gas comparison CRP-PR-ODOUR
Ammonia, first hour	**≈ 25× activated carbon**	96% of a 700 mg load in 1 h; ≈30% capacity left at 330 h (NedLab 127617/2011)
Ammonia, per kg	**≈ 34 – 38× activated carbon**	Calculated: 25 × 610 / (400–450) g/L
Ammonia capacity at breakthrough	**160 g/kg (<10 mg/L) · 240 g/kg (<50 mg/L)**	Per kg of resin (CRP-Int data) · nitrate 14, nitrite 16, phosphate 3.5, sulphide 8.5 g/kg
Operating principle	**Chemosorption + ion exchange**	Binds polar gases, bases and acids, chemically; captured gas stays bound
Ion exchange capacity	**109.1 mg H-ion / L**	Activated carbon: 27.26 mg H-ion / L (CRP-Int test)
Odour adsorption	**100%**	Activated carbon: 0% (CRP-Int comparison) · decolourisation 94% vs 22%
Humidity	**No pre-drying needed**	Keeps working in humid air, where carbon loses capacity above ≈60–70% RH
After drying	**Keeps its pore volume**	Stored and handled completely dry; does not pulverise
pH in water	**6.5 – 7.0**	Does not dissolve in water
Secondary targets	**NO_3^- · NO_2^- · PO_4^{3-} · VOC**	Application-dependent; carbon stays stronger on aromatic solvents and ketones
Regeneration	**Dilute NaOH**	Original capacity returns; formaldehyde stays bound (not or barely regenerable)
Safety	**Not classified as hazardous**	CLP 1272/2008 · non-toxic · not flammable; smoulders only above 180 °C
Power requirement	**0 W**	Completely passive — also captures gas with the fan off
Production since	**1993**	EU production · Arendonk, Belgium
Packaging	**650 kg big bags · 23 kg carton drums**	Palletised
Supply	**Lots of 1–5 t · 10 t · 25 t**	FOB Port of Antwerp or Port of Rotterdam · samples 1–5 kg · delivery on an agreed schedule

Evidence. Ammonia: NedLab Analytical Report 127617/2011 (independent; CR Resin filter vs. activated carbon filter of identical shape, equal amounts). Formaldehyde and ammonia ratings: odour-substance comparison, tests by Royal Haskoning, Netherlands — reports CRP-PR-HCHO and CRP-PR-ODOUR. Capacities, pore volume, ion exchange capacity, density and humidity: CRP-Int data. Per-kg figure calculated from these data.

Use in air purifier filters. Recommended start: 10–15% CR Resin by weight blended into a carbon/zeolite bed, or a CR Resin zone on the inlet side of the granular bed — or a dedicated CR Resin stage in a smaller housing. Performance in a specific filter is confirmed in a joint test (single-pass efficiency, breakthrough, pressure drop, fan-off decay, ageing, resin emissions).

Safety and supply. Not classified as hazardous under (EC) 1272/2008 (CLP); see SDS v1.01. Keep dry; avoid strong oxidising agents, strong acids and strong alkalis. Delivered FOB Port of Antwerp or Port of Rotterdam; samples 1–5 kg, bulk supply in lots of 1–5 t · 10 t · 25 t, packed in 650 kg big bags or 23 kg carton drums on pallets, delivered on an agreed schedule.

Technical information based on present knowledge; not a guarantee of fitness for a specific application. Specifications subject to change without notice.