CRP-INT · CR RESIN – DUAL ACTION · CRP-CMP-001

Dual Action in numbers: more capture, less weight, less volume

One polymer resin binds ammonia and formaldehyde — the two indoor gases activated carbon holds worst. Against activated carbon:

25×
more ammonia in the first hour, same volume
NedLab 127617/2011

34–38×
more ammonia per kilogram — CR Resin is far lighter
calculated: 25 × 610/(400–450)

−30%
weight per litre: ≈400–450 g vs ≈610 g for carbon
CRP-Int test

5/5
for formaldehyde and ammonia — carbon scores 2/5
Royal Haskoning, 62 gases

Two ways filter makers gain

1 · Upgrade: add 10–15%

Mix 10–15% CR Resin by weight into the carbon or zeolite media you use today. Same housing, same line.

- ≈3–4× the ammonia performance (our estimate)
- Formaldehyde covered in the same bed
- Longer endurance: the resin keeps binding after carbon saturates
- A premium product to sell, at a small added cost per filter

2 · Downsize: smaller housing

Use CR Resin as a dedicated stage and shrink the bed for the same duty.

- Smaller cartridges, inserts and housings
- ≈30% less media weight per litre
- Less plastic, packaging, freight and storage
- Sized with you in a joint test

CR Resin is a premium medium: more expensive per kilo than carbon, but you need far less of it — 10–15% of the bed in a blend, or a smaller housing as a stage.

✓ Smaller cartridges and housings
More capture per litre: a smaller CR Resin bed can do the work of a larger carbon bed — or today's housing simply lasts longer. We size it with you in a joint test.

✓ Lighter filters, lower freight
1 litre of CR Resin weighs ≈400–450 g, carbon ≈610 g: 160–210 g less per litre — 160–210 kg less for every 1,000 one-litre inserts.

✓ One medium instead of two
Ammonia normally needs an acid-impregnated carbon, formaldehyde a permanganate pellet. CR Resin covers both in one stage.

✓ Longer working life
Still ≈30% active at 330 hours, when the carbon in the same test had dropped to zero (breakthrough after ≈150 h).

✓ 4× ion-exchange capacity
109.1 vs 27.26 mg H^+ per litre (≈5–6× per kg) — the chemistry behind the strong ammonia binding.

✓ 2.3× pore volume
270 vs 115 cc per 100 g: about 90% of every granule is pore space.

✓ Works in humid air
No pre-drying needed. Activated carbon loses capacity above ≈60–70% RH.

✓ Captured gas stays bound
Chemosorption: formaldehyde is not released again, and the resin keeps binding with the fan off — 0 W.

✓ Dust-free granules
2–6 mm granules shed no fines towards your HEPA. Fine 2–4 mm and powder for nonwovens on request.

✓ Drop-in for your line
Blend 10–15% by weight into today's carbon or zeolite bed — ≈3–4× the ammonia performance (our estimate).

✓ Safe and made in Europe
Not classified as hazardous (CLP). Produced in Arendonk, Belgium, since 1993.

✓ Bulk supply
1–5 t · 10 t · 25 t in 650 kg big bags or 23 kg carton drums, FOB Antwerp or Rotterdam. Samples of 1–5 kg within a few working days.

✓ Less waste
Longer life means fewer filter changes, and a smaller insert means less media, plastic and packaging thrown away every year.

✓ Lower transport costs
Lighter inserts and smaller housings: more filters per carton, pallet and container, and less weight on every shipment.

✓ More 5-star reviews
A filter that still removes odour weeks later means fewer complaints and returns — and more satisfied customers giving top ratings.

Which medium covers which gas

Filter medium	Ammonia	Formaldehyde	Weight per litre	Media needed

Activated carbon	2/5 moderate	2/5 moderate	≈610 g	1 — weak on both
Acid-impregnated carbon	target gas	—	≈ carbon	+ 2nd medium for formaldehyde
Permanganate–alumina pellets	—	target gas	≈800 g (typical)	+ 2nd medium for ammonia
Natural zeolite	good	little	≈800–1,000 g (typical)	+ 2nd medium for formaldehyde
CR Resin – Dual Action	**5/5 excellent**	**5/5 excellent**	**≈400–450 g**	**1 — both gases**

Sources: NedLab Analytical Report 127617/2011 (ammonia, same volume of high-quality activated carbon); Royal Haskoning odour comparison, Netherlands, 62 substances, scale 1–5; CRP-Int tests and technical data sheet CRP-TDS-001 (weight, ion exchange, pore volume, humidity). "34–38× per kg" and "−30%" are calculated from these figures. Target gases of impregnated media as stated on makers' own product sheets; zeolite and alumina weights are typical industry values. Results in your own filter are confirmed in a joint test.