

TYPE

Non self-curing novolac

FORM OF DELIVERY (f.o.d.)

Coarsely ground

USES

Fast drying spirit varnishes, coatings with resistance to petrol and mineral oils, electroinsulating varnishes.
Reinforcement of rubber.

PRODUCT DATA

The data are determined by our quality control for each batch (lot) before release.

Determined per batch:

Dynamic Viscosity (Ubbelohde) DIN 53177

| | | |
|--|---------|-------------|
| dynamic viscosity | [mPa.s] | 2750 - 3750 |
| 50 % propylene glycol monomethyl ether (23 °C) | | |

Iodine Colour Number DIN 6162

| | | |
|----------------------|--|-------|
| iodine colour number | | <=120 |
|----------------------|--|-------|

HPLC PM 279

| | | |
|----------|-----|--------|
| content | [%] | <= 1,0 |
| (Phenol) | | |

Melting Interval DIN 53181

| | | |
|--------------------|------|-----------|
| melting range | [°C] | 108 - 124 |
| (capillary method) | | |

SOLUBILITY AND COMPATIBILITY

ALNOVOL PN 430 is soluble in any ratio in ketones, alcohols, esters, glycol ethers. Insoluble in aliphatic and aromatic hydrocarbons. ALNOVOL PN 430 is compatible with alkyd resins in the mixing ratios normally encountered in commercial practice. Good compatibility exists also with urea resins, melamine resins, epoxy resins, unplasticized phenolic resins and with polyvinyl butyral.

The compounding into standard rubber grades shouldn't be a problem especially by using NBR.

We recommend in any case to check compatibility before using the resin.

PROCESSING PAINT

ALNOVOL PN 430 is dissolved at normal temperature in alcohols, ketones esters and glycol ethers and, if necessary, mixed with solutions of the modifying resins mentioned above.

PROPERTIES AND USES

Paint

ALNOVOL PN 430 dry by solvent evaporation. It is commonly applied as a solution in ethanol. Solutions of ALNOVOL PN 430 dry fast to hard films with a good resistance to water, weak acids, petrol, mineral oils and tar. Coatings are weakly yellowish and posses moderate. The addition of small amounts of plasticizing components such as suitable alkyd resins or polyvinyl butyral has proved to be an effective way of modifying.

Spirit varnishes

ALNOVOL PN 430 serve as binder for fast-drying spirit varnishes. Such varnishes are used, for instance, in iron foundries for coating moulds and for coating toys and other consumer goods. Other fields of application are brewery enamels for vats and barrels and French polish.

Coatings with resistance to petrol and mineral oils

ALNOVOL PN 430 combined with PHENODUR® PR 373 or PR 263 and, if necessary, plasticizing alkyd resins and/or polyvinyl butyral for the manufacture of coatings which dry by solvent evaporation. Such coatings are resistant to petrol and mineral oils and are used for protecting the interior of tanks, storage containers, pipe systems and machine housings.

Rubber

ALNOVOL PN 430 is particularly suitable for reinforcing nitrile rubber. It can be used to produce very hard vulcanizates with both high resilience and very high resistance to tear propagation. For curing either hexamethylenetetramine or highly etherified melamine resins, e.g. CYREZ® 963 or CYREZ® 964 are added. The reinforcing effect can be regulated by the amount of hexamethylenetetramine added. ALNOVOL PN 430 can be homogeneously incorporated even in nitrile rubbers with low acrylonitrile content (27 %). Vulcanizates reinforced with ALNOVOL PN 430 and large amounts of hexymethylenetetramine are notable for their virtually constant hardness and resilience with increasing temperature. The required amount of crosslinker can be incorporated into the rubber in the rubber in the second mixing stage.

For proper curing a resin to hardener ratio of 7:3 in the case of CYREZ 963 is recommended. ALNOVOL PN 430 is not so well suited for rubber compounds.

Typical compounds

| Mix | Pts by wt | Pts by wt |
|--------------------------|-----------|-----------|
| Nitril rubber* | | |
| ML 1+4 (100 °C) 45 ±5 | 100,0 | 100,0 |
| Hexamethylenetetramine | 3.0 | 4.0 |
| Stearic acid | 1.5 | 1.5 |
| Zinc oxide | 5.0 | 5.0 |
| Sulfur | 1.5 | 1.5 |
| ALNOVOL PN 430 | 47.0 | 46.0 |
| 2- Mercaptobenzothiazole | 1.5 | 1.5 |

* NBR with 28% acrylonitrile ML 1+4 45±5

| Test values after vulcanisation (30 min. at 155°C) | Unit | Value | Value |
|---|--------|-------|-------|
| Tensile strength | [MPa] | 24.2 | 25.3 |
| Elongation at break | [%] | 430 | 394 |
| Modulus 100 % elongation | [MPa] | 11.0 | 13.1 |
| Modulus 300 % elongation | [MPa] | 16.8 | 19.8 |
| Notch impact strength | [N/mm] | 55 | 47 |
| Hardness (Shore A) | [°] | 95 | 96 |
| Resilience | [%] | 34 | 39 |

STORAGE

At temperatures up to 25 °C storage stability packed in original containers amounts standard to 365 days.

The expiration date may be extended and COA updated after QC testing of retained samples, only for material in allnex possession.