
Technical Information

Tamol[®] NN 9104

Stabilizer, dispersing agent and precipitant for the chemical and allied industries; dispersing agent and auxiliary for rubber production and for processing natural and synthetic rubber latices.

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09_150409e-001/Page 1 of 5

® = Registered trademark of BASF in many countries.

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Chemical nature

Tamol® NN 9104 is the sodium salt of a condensation product of naphthalene-sulfonic acid with formaldehyde.

Tamol® NN 9104 has a low degree of polycondensation.

The product is identified by the inclusion of a four-digit number in the product name. The first two digits indicate the typical active content and the last two digits the typical sodium sulfate content. The overall solids content is the sum of the active content and salt content. All the figures are approximate.

PRD-No.*

30043760

* BASF's commercial product numbers.

Appearance

Tamol® NN 9104 is a pale or medium brown powder.

Handling and Storage**Handling**

- a) Tamol® NN 9104 is hygroscopic and soluble in water, with the result that it absorbs moisture very quickly. Drums and bags should be tightly resealed each time material is taken from them. We strongly recommend to protect the product from moisture.
- b) Please refer to the latest Safety Data Sheet for detailed information on product safety.

Shelf life

If stored correctly in the sealed original containers, Tamol® NN 9104 can be kept for 12 months. As powder, Tamol® NN 9104 in principle has an unlimited shelf life; however, because it has a tendency to caking, especially after prolonged storage on pallet racks, we only guarantee it for one year. The free-flowing properties of powder that is only slightly caked can usually be restored by moving the bags.

Properties

Some physical properties are listed in the table below. These are typical values only and not all of them are monitored on a regular basis. They are correct at the time of publication and do not necessarily form part of the product specification. A detailed product specification is available on request or via BASF's WorldAccount: <https://worldaccount.basf.com> (registered access).

Tamol® NN 9104	Unit	Value
Physical form		powder
Dry content	%	95
Active content	%	91
Water (DIN ISO 3733)	%	5
Sodium sulfate	%	4
Degree of polycondensation		low
pH value (10% in dist. H ₂ O)		10
Formaldehyde content	%	0 – 0.1
Bulk density	g/L	500
Iodine color value (10% solids in dist. H ₂ O)		40
Particle size		x ₉₅ < 200 µm x ₅ < 20 µm

All figures are approximate.

Solubility

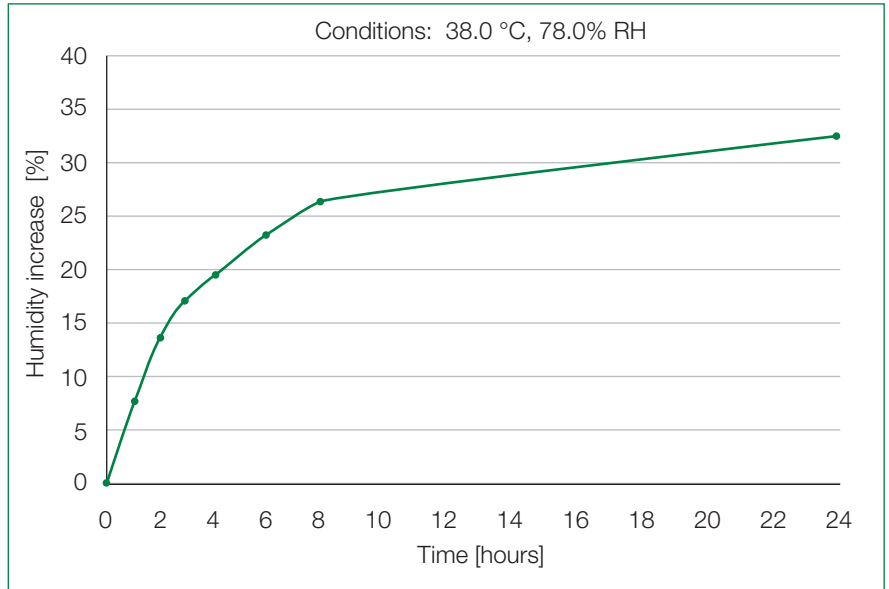
Aqueous solutions with a concentration of up to about 40% can be prepared from Tamol® NN 9104. If faucet water is used, carbonate contained in small quantities in Tamol® NN 9104 could cause precipitation of CaCO₃.

Compatibility

Tamol® NN 9104 is largely resistant to alkalis, acids and salts. As anionic auxiliary it is compatible with other anionic and nonionic products. Precipitation may occur if it is combined with cationic auxiliaries.

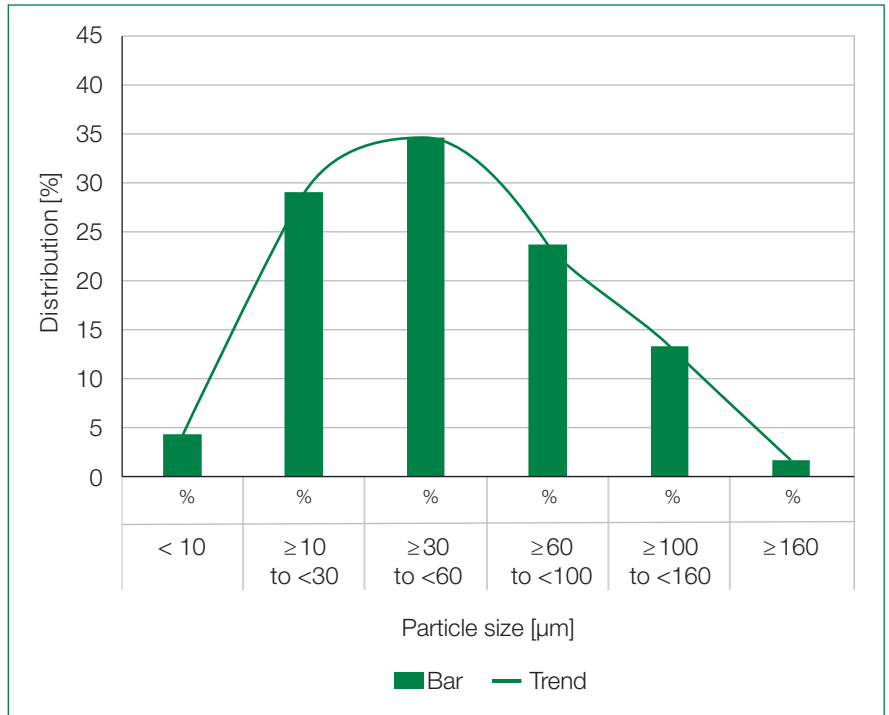
Hygroscopicity

For storage and processing of Tamol® NN 9104 it is important to know how the product behaves at elevated temperatures and humidity. The following graph shows this dependency (the specifications represent approximate values):



Particle distribution

The following graph shows the particle distribution (curve) and component ratio (bars) of Tamol® NN 9104 (approximate values):



Application

Tamol® NN 9104 is a very versatile stabilizer for aqueous dispersions and emulsions, and for aqueous solutions of surfactants and other auxiliaries. It can also be employed as grinding aid and dispersing agent for pigments and dyes in aqueous media, and as precipitant for basic dyes and cationic compounds. It may also be used as auxiliary in metal finishing.

Tamol® NN 9104 has an excellent dispersing action and performs well as protective colloid. It is not surface-active, with the result that it has low wetting power and very little foaming effect.

Areas of application

Stabilizer for dispersions and emulsions

Tamol® NN 9104 stabilizes dispersions (e.g. of polymers, resins and paraffin) and emulsions against physical and chemical influences that could impair their stability during processing. The addition of Tamol® NN 9104 also has the effect that the solid components of the dispersions remain finely dispersed if any flocculation occurs. Fillers and pigments that are to be incorporated into dispersions or emulsions are best dispersed in water with Tamol® NN 9104 before processing.

Grinding aid and dispersing agent

Tamol® NN 9104 can be used as grinding aid and dispersing agent in the production of water-dispersible pigments and fillers and in the production of pigment slurries and other suspensions of particulate solids in water, e.g. in the manufacture of dyes and fillers.

The effect of the dispersing agent is evident in a sharp reduction in the viscosity of a pigment dispersion if the optimum quantity is added. This makes it possible for highly concentrated slurries to be produced which are much easier to handle, because they can be stirred and pumped more easily and with less use of energy. Because of its low sensitivity to Ca^{2+} ions Tamol® NN 9104 is used especially in the production of calcium sulfate slurries.

In industry, Tamol® NN 9104 is used to disperse polishing and abrasive ingredients in powder form in emulsions for polishes and cleaners.

Precipitant for cationic compounds

Good color lakes with basic dyes can be made with Tamol® NN 9104 as precipitant (laking agent).

Auxiliary for metal surface treatment

The addition of Tamol® NN 9104 to hot degreasing agents and spray cleaners, e.g. spray degreasers and high-pressure cleaners, improves the stability of the solutions and increases the dirt-carrying capacity. The cleaning effect of these agents is often improved to a crucial extent.

The performance of sealers for anodized aluminum can be improved by adding 20 – 30% of Tamol® NN 9104, expressed as a proportion of the salts in the sealing solution.

Tamol® NN 9104 can also be employed as auxiliary brightener in alkaline silver plating baths.

Auxiliary for polymerizing rubber

Tamol® NN 9104 can be added to the mixture of surfactants employed in emulsion polymerization processes for synthetic rubbers such as styrene-butadiene rubber. It prevents emulsions from coagulating.

Auxiliary for latex processing

Good results can be achieved with Tamol® NN 9104 as dispersing agent for fillers, pigments and vulcanizing agents in natural and sythetic rubber latices, and also to stabilize these dispersions against physical and chemical influences. The unwanted increase in viscosity that occurs as a result of prevulcanization can be delayed by adding Tamol® NN 9104.

Safety and Labeling

Please refer to the safety data sheet for information on classification & labeling, safe use, handling and transport.

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