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Energizing Chemistry

TECHNICAL INFORMATION

Mesamoll®

Mesamoll® is a phthalate-free general purpose plasticiser with a good gelling behaviour and an exceptional saponification resistance. It is compatible with many types of polymers including PVC, polyurethanes, and rubber.

Chemical composition:	alkylsulphonic acid ester with phenol (ASE)
CAS-Reg.-No.:	091082-17-6 (ASE)
Physical form:	slight yellowish, clear liquid
Health and safety information:	Relevant safety data and references as well as possibly necessary warning labels can be found in the safety data sheet no. 00402133.
Indication according to GefStoffV:	Mesamoll® is not subject to labelling according to the German Regulations on the Transport of Dangerous Goods, the German Regulation on Dangerous Substances (GefStoffV) or corresponding EU directives.

Specified Properties:

Property	Nominal Value	Unit	Test Method
Refractive index n_D20	1,499 ± 0,003	--	DIN EN ISO 6320 (in acc. with)
Hazen colour value	≤ 350	--	DIN ISO 6271
Density at 20 °C	1,055 ± 0,015	g/cm³	DIN 51 757
Viscosity at 20 °C	125 ± 15	mPa s	DIN 53 015
Water content	max. 0,05	%	DIN 51 777

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Additional Information:

Property	Typical Value	Unit	Test method
Saponification number	only partial saponification	mg KOH/g	DIN 53 401
Pour point	approx. -32	°C	ISO 3016
Flash point (open cup)	approx. 225	°C	ISO 2592
Dissolution temperature	approx. 120	°C	DIN 53 408 (method based on)

These raw material properties are typical properties and, unless specifically indicated otherwise, are not to be considered as delivery specification.

Storage

Mesamoll® should be kept in its tightly sealed original container in a dry place.
If stored properly, the product is stable for 2 years.
During storage, Mesamoll® should not come into contact with iron for prolonged periods since this may cause discoloration of the plasticizer, especially at temperatures above 50°C.

The materials recommended for transport and storage containers are: aluminium, stainless steel (1.4541 resp. 1.4571), iron containers with an oil-resistant coating such as DD coating, tanks in uncoated polyester or, preferably, with an impervious DD coating.

As sealants materials should be used which are resistant to Mesamoll® as Viton® (Fluor-elastomer from DuPont Dow), Teflon® (Poly-tetrafluorethylene from DuPont) or Centellen® (Synthetic fibre based, from Fa. Hecker Werke GmbH & Co KG).

To ensure that Mesamoll® can be easily pumped from outdoor tanks even at low temperatures, tanks should be well insulated and/or the plasticiser heated slightly if necessary. Warm water has proved to be a suitable heating medium. Heating coils should be made of aluminium or, if necessary, of stainless steel 1.4571.

Solubility

Soluble in all common solvents, but insoluble in water.

Packaging

Road tankers
1000 kg PE-containers
240 kg metal drums

POLYMER ADDITIVES

Instructions and recommendations for use

Density and viscosity are important variables determining storage, the design of the storage tanks and the dimensions of pipelines and delivery pumps.

The graphs in Figures 1 and 2 show these data for Mesamoll®.

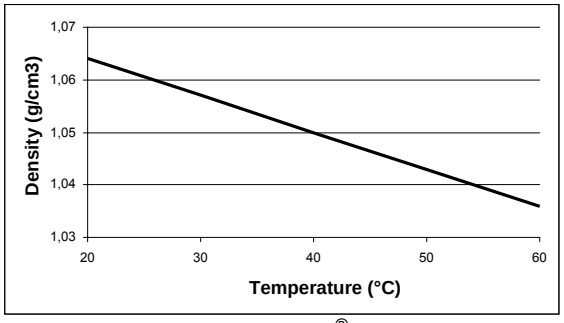

Fig. 1: Density of Mesamoll® as a function of the temperature (DIN 51 757)

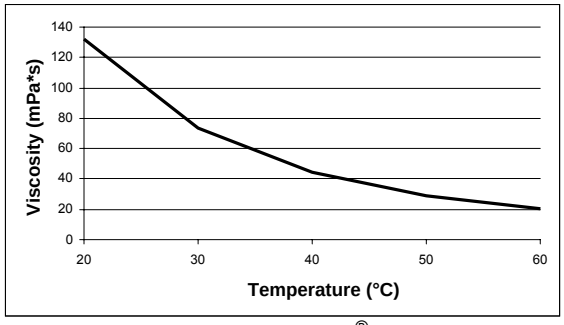

Fig. 2: Viscosity of Mesamoll® as a function of the temperature (DIN 53 015)

General properties

Mesamoll® is characterised by

- an excellent gelling capacity with a large number of polymers including PVC, resulting in lower processing temperatures and shorter processing times.
- a high saponification resistance due to Mesamoll®'s chemical structure, especially compared to DINP (see Fig. 3). This is especially beneficial for articles which come into contact with water and alkalis.
- a good resistance to weathering.
- favourable dielectric properties for high frequency welding, leading to short cycle times.

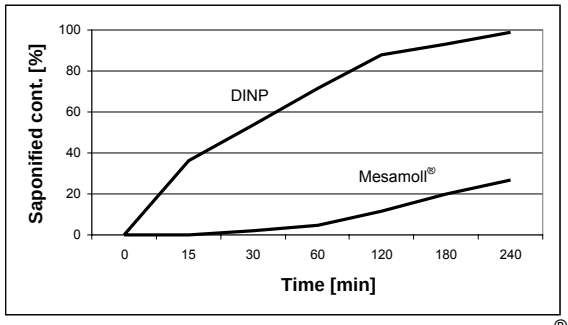

Fig. 3: Saponification rate of Mesamoll® compared to commercial DINP (method based on DIN 53 404).

- a good compatibility with a large number of polymers such as polyvinyl chloride (PVC), polyurethane (PUR), acrylonitrile-butadiene rubber (NBR), natural rubber (NR), styrene-butadiene rubber (SBR), blends of styrene-butadiene rubber and butadiene rubber (SBR/BR), isobutylene-isoprene rubber (IIR), and chloroprene rubber (CR).

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Applications

Mesamoll® is used as a plasticiser for a wide range of articles based on polyvinyl chloride (PVC), polyurethane (PUR), acrylonitrile-butadiene rubber (NBR), natural rubber (NR), styrene-butadiene rubber (SBR), blends of styrene-butadiene rubber and butadiene rubber (SBR/BR), isobutylene-isoprene rubber (IIR), and chloroprene rubber (CR).

Typical applications are:

- Polyurethane-based sealing and adhesive systems (One-component and two component systems)
  Mouldable, easy-to-process sealants for filling or covering joints in structures and parts of buildings.

- Cleaning
  Rinsing and service fluids for polyurethane foaming machinery.

- Rotational Moulding
  Vinyl articles made by rotational casting.

- Dip Moulding
  PVC one way gloves and other articles which are produced by dip moulding.

- Calendering
  Film for the automotive industry, film for tunnel linings and other construction applications, swimming pool covers, shower curtains, office film, welding film, film for electrical insulation, adhesive tape.

- Extrusion
  Profiles for the automotive industry, jointing strip, tubing, weathering and alkali-resistant structural profiles, blown film.

- Injection Moulding
  Work boots, technical articles.

- Coatings (including spreading)
  Coatings for air-supported structures and tents, occupational and protective clothing, rain-wear, bath mats, expanded film.

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Mesamoll

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Functional Chemicals Polymer Additives

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