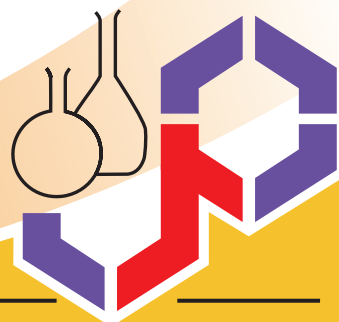


N,N-DIMETHYLBENZYLAMINE  
*in*  
EPOXY RESIN  
&  
POLYURETHANE FOAM



DR. J. PHARMACHEM (INDIA)

## APPLICATIONS:

### Details of use in Epoxy Resin Formulations

Dimethylbenzylamine (BDMA) functions as a relatively slow acting tertiary amine type catalyst in most epoxy systems, affording a good pot life, low colour, medium heat distortion temperature and good electrical properties.

### Accelerator Applications

Dimethylbenzylamine (BDMA) is used as accelerator in epoxy casting resins using acid anhydride curing agents. Curing cycles are sharply reduced without sacrificing pot life, heat distortion temperatures or electrical properties. Up to 1% Dimethylbenzylamine (BDMA) (based on total resin weight) is recommended with Phthalic, Hexahydrophthalic, Dodecenyl-Succinic, or other anhydride systems.



### Amine accelerator for polymerisation of epoxy resins

Dimethylbenzylamine (BDMA) is used as a direct alternative (2,4,6 – Tri [dimethylaminomethyl] phenol) and 2-Dimethylaminoethanol. It has the great advantage of a longer shelf life, and as a consequence of it being much less viscous than (2,4,6 – Tri [dimethylaminomethyl] phenol) and 2-Dimethylaminoethanol. It diffuses far more easily throughout the epoxy resin. One should note however that when using BDMA a concentration of 2.5 – 3% is required in the epoxy resin, which is twice as much as DMP-30 and 25% more than DMAE.

### Catalyst for Rigid polyurethane foams

Dimethylbenzylamine (BDMA) is an excellent catalyst for the production of rigid polyurethane foams due to its superb cross-linking abilities.

Rigid foam has the lowest thermal conductivity of any commercially available insulating material hence its use in the building industry, refrigerators, freezers and hot water tanks.

In addition to insulating applications, rigid foams also find uses in buoys, buoyancy aids and as void filling materials in houses where they are used to prevent the ingress of pests and vermin.

Dimethylbenzylamine (BDMA) is used mainly in the continuous production of slab stock foam with densities higher than 50 kg/m<sup>3</sup>.



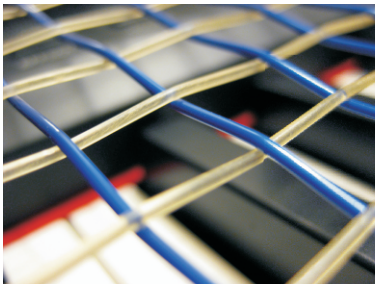


## Use in Soft Polyester / Polyurethane Foam systems

Dimethylbenzylamine (BDMA) is used as a catalyst for soft polyester-based polyurethane systems, semisolid foams, pre-polymerisation agents, which are based on TDI 65/35 to improve the effect of impregnation agents on cellulose fibres. 1.0 - 1.6 parts by weight Dimethylbenzylamine (BDMA), calculated on 100 parts by weight polyester polyol, are used, depending on the water content of the formulation (2.0 - 5.0 parts by weight water). Since Dimethylbenzylamine (BDMA) is insoluble in water, it can be emulsified in a mixture of water.

## Two component urethane injection resin

BDMA is used as catalyst / curing agent for Polyurethane based Injection Resin which is a two component, low viscosity polyurethane resin used for sealing water leaks through cracks in concrete structures. Water is poured after 1-2 hours after the resin mixture stabilises whereby the resin expands upto 10 to 15 times the original volume. This reaction produces an impermeable, closed cell, hydrophobic type, flexible foam that displaces water and tenaciously adheres to the damp substrate. The flexibility of the cured resin allows movement at the existing crack, thereby preventing transfer of stress to other areas of the structure.



## Other known applications

- It is used in Adhesive formulations
- In Laminating resins
- Used in manufacture of electrical insulation parts.
- Good emulsifier for organic compounds.

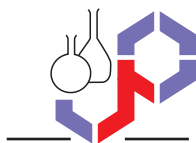
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