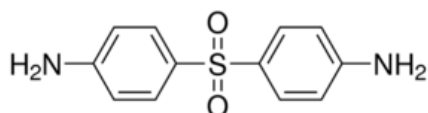


Technicure® 44 DDS

CAS No: 80-08-0

Description:

Technicure 44 DDS or 4, 4' diaminodiphenyl sulphone, also referred as DDS or DAPS, is a high performance curing agent for epoxy resins.



Advantages:

- Excellent thermal stability
- Very high chemical resistance
- Excellent high temp. properties

Typical Applications:

- High temperature composites
- Structural adhesives
- Castings
- High temperature coatings

Handling Precautions:

Refer to the product Safety Data Sheet

Typical Properties:

Appearance:	White Crystalline Powder
Assay:	99.0% min.
Melting point:	176- 185 °C
Amine H eq. weight:	63
Moisture content:	<0.15%

Typical Formulations (by wt.):

DEN 438	50
MY 0500	50
Technicure 44 DDS	30
Technicure LC-80	5
Fumed silica	1

Reactivity by DSC¹:

Onset Temperature, °C	108
Peak Temperature, °C	124

Glass Transition Temperature ² , °C	222
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1. @ 10°C /min. scan rate
2. By DMA, after 1 hr. @ 120°C + 1 hr. @ 170°C + 3 hrs. @ 200 °C cure

A&C Catalysts, Inc.

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Technicure LC-80 as an accelerator for Technicure 44 DDS:

A model formulation shown in Table 1 was developed to evaluate Technicure LC-80 as an accelerator for 44 DDS. Several formulations were prepared with varying level of LC-80 and evaluated for reactivity by DSC and glass transition temperature by DMA. As a control accelerator, 2-ethyl, 4-methyl imidazole (Technicure EMI-24) was evaluated using the same model formulation.

The results shown in Table 2 indicate that increasing loading level of LC-80 lowers the onset and peak temperature and reaches a plateau at about 5-7 PHR level. Higher loading levels of LC-80 don't further lower the reactivity of the formulation.

The control formulation based on 3 PHR EMI-24 demonstrated higher onset and peak temperature as well as lower glass transition temperature as compared to 5 PHR Technicure LC-80 based formulation.

DEN 438	50	DEN 438	50
MY 0500	50	MY 0500	50
Technicure 44 DDS	30	Technicure 44 DDS	30
Technicure LC-80	X	Technicure EMI-24	Y
Fumed silica	1	Fumed silica	1

X: 0, 3, 5, 7, 9, 12, 15

Y: 3

Table 2. Reactivity by DSC and Glass Transition Temperature*

LC-80, PHR	EMI-24 PHR	Onset Temp. °C	Peak Temp. °C	Tg, °C
0	-	194	218	243
3	-	184	215	234
5	-	108	124	221
7	-	103	122	214
9	-	104	122	207
12	-	106	120	195
15	-	105	119	178
-	3	115	129	194

* After 1 hr. @ 120°C + 1 hr. @ 170°C + 3 hrs. @ 200 °C cure

Table 1. Formulations (by wt.)

Formulation with LC-80	Control with EMI-24
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