CYCAT® 4045

Technical Datasheet

PRODUCT DESCRIPTION

CYCAT® 4045 catalyst is an amine-blocked para-toluene sulfonic acid catalyst supplied in ethylene glycol. It is recommended for accelerating the cure response of amino crosslinking resins while providing improved formulation package stability compared with the un-blocked para-toluene sulfonic acid, CYCAT® 4040 catalyst.
It is especially recommended for use with highly alkylated amino crosslinking resins. It provides excellent stability in high solids and waterborne systems, and in the latter it can be added without causing binder precipitation, which can often occur due to a drop in pH.

BENEFITS

- Fast cure response
- Excellent stability in waterborne and solvent borne systems
- Minimizes film wrinkling

APPLICATION AREAS

- General Industrial Finishes
- Automotive basecoats
- Coil coatings
- Exterior can coatings

PHYSICAL/CERTIFIED PROPERTIES

Property	Value	Method
Appearance	Clear liquid	ASTM E284
Acid Value, mg KOH/g	60-70	DIN EN ISO 2114
Color, Gardner	≤ 1	DIN EN ISO 4630-1

TYPICAL PROPERTIES (NOT CONTINUALLY MEASURED

(NOT CONTINUALLY MEASURED)

Property	Value	Method
Density, g/ml	~1.15	ASTM D1475-13
% Active	~20	

SOLUBILITY

CYCAT® 4045 catalyst is soluble in oxygenated solvents such as alcohols, glycols, glycol ethers and water. It has limited solubility in ketones, esters and hydrocarbon solvents.

CATALYST ADDITION

In order to prevent recrystallization of the acid, a sufficiently high level of alcohol should be present in the total solvent system of the formulation. Recrystallized acid can cause a reduction in cure response and may create local areas of high acidity that could cause the formation of gel structures. Therefore, it is suggested that CYCAT® 4045 catalyst be diluted approximately 1:1 with an alcohol before adding to the final formulation.

RECOMMENDED LEVELS

CYCAT® 4045 catalyst contains 20% active acid and has an acid number of 60 – 70 making it half as active as CYCAT® 4040 catalyst. In systems containing highly alkylated amino crosslinking resins, such as CYMEL® 303 LF resin, in combination with hydroxyl or carboxy functional acrylic or polyester resins, the following starting point levels of CYCAT® 4045 catalyst are recommended:

Polymer type	Cure Temp, °C	Catalyst level[(1)]
R-OH	> 150	1.0
	125 - 150	2.0
R-COOH	110 - 125	4.0
	150 - 175	1.0
	125 - 150	2.0

[(1)] % catalyst solution based on total resin solids

STORAGE

CYCAT® 4045 catalyst has a shelf life of 720 days from the date of manufacture when stored in original unopened containers at temperatures up to 32°C.

SAFETY AND HANDLING

Please consult the Safety Data Sheet for safety, health, and environmental data. FOR INDUSTRIAL USE ONLY.