



## Product Data Sheet

### AMBERLYST™ A21DRY Ion Exchange Resin

Industrial-grade, Weakly Basic Polymeric Resin

#### Description

AMBERLYST™ A21DRY Ion Exchange Resin is an industrial-grade, weakly basic, polymeric resin supplied in bead-form. This weak base anion exchange resin was developed for the purification or disproportionation of chlorosilanes.

AMBERLYST™ A21DRY can also be used for the removal of acidic materials from hydrocarbon streams where minimal water can be tolerated.

#### Applications

- Silane disproportionation
- Deacidification from non-aqueous streams

#### Typical Properties

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##### Physical Properties

Copolymer	Styrene-divinylbenzene
Matrix	Macroporous
Type	Weak base anion
Functional Group	Tertiary amine
Physical Form	Beige, opaque, spherical beads

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##### Nitrogen BET

Surface Area	35 m <sup>2</sup> /g
Total Pore Volume	0.10 cc/g
Average Pore Diameter	110 Å

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##### Chemical Properties

Ionic Form as Shipped	Free base (FB)
Concentration of Base Sites †	≥ 5.00 eq/kg
Catalyst Volatiles	≤ 0.3%

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##### Particle Size §

Particle Diameter	550 µm
< 300 µm	≤ 1.0%
> 1180 µm	≤ 2.0%

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##### Swelling (in solvent)

SiCl <sub>4</sub>	7%
SiCl <sub>3</sub> H	26%

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##### Density

Shipping Weight	330 g/L
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† Dry Weight Capacity ≥ 5.00 eq/kg

§ For additional particle size information, please refer to the (missing or bad snippet).

#### Suggested Operating Conditions

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Maximum Operating Temperature	100°C (210°F)
Bed Depth, min.	600 mm (2.0 ft)
Flowrates	
Linear Hourly Space Velocity (LHSV)	0.5 – 5 h <sup>-1</sup>

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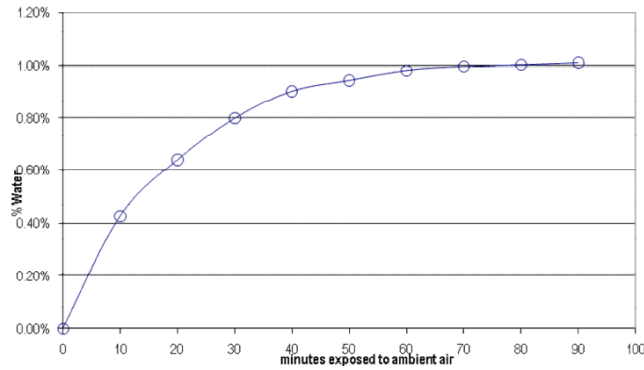
\* 1 BV (Bed Volume) = 1 m<sup>3</sup> solution per m<sup>3</sup> resin or 7.5 gal per ft<sup>3</sup> resin

## Application Information

### Water Uptake

AMBERLYST™ A21DRY Ion Exchange Resin does exhibit a tendency to pick up moisture from the air. The amount of moisture pickup by the resin is likely dependent upon the ambient humidity. Figure 1 provides an example of moisture pickup, showing that after one hour approximately 1% moisture had been added to AMBERLYST™ A21DRY at ambient temperatures.

Figure 1: Moisture Uptake



### Loading and Handling Procedure

Due to the fact that AMBERLYST™ A21DRY resin picks up moisture upon exposure to air, it is recommended that the exposure of AMBERLYST™ A21DRY to air containing any moisture be avoided. Therefore, it is recommended that the container of AMBERLYST™ A21DRY be opened under conditions where the atmosphere is moisture-free and added to the reactor under a blanket of dry nitrogen.

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Please be aware of the following:

- **WARNING:** Oxidizing agents such as nitric acid attack organic ion exchange resins under certain conditions. This could lead to anything from slight resin degradation to a violent exothermic reaction (explosion). Before using strong oxidizing agents, consult sources knowledgeable in handling such materials.

**Have a question? Contact us at:**

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