



## Product Data Sheet

### DuPont™ AmberLyst™ 15DRY Polymeric Catalyst Industrial-grade, Strongly Acidic Catalyst

#### Description

DuPont™ AmberLyst™ 15DRY Polymeric Catalyst is a bead-form, strongly acidic catalyst developed particularly for heterogeneous acid catalysis of a wide variety of organic reactions. It is also useful in non-aqueous ion exchange systems for the removal of cationic impurities.

The macroporous pore structure of AmberLyst™ 15DRY permits ready access of liquid or gaseous reactants to the hydrogen ion sites located throughout the bead, thus facilitating successful performance even in non-swelling organic media. The main applications are alkylation, esterification, etherification, condensation, and hydrolysis.

#### Applications

- Esterification (acetates, acrylates, fatty acid esters)
- Etherification (MTBE, ETBE, TAME)
- Phenol alkylation
- Condensation
- Hydrolysis

#### Typical Properties

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##### Physical Properties

|                  |                               |
|------------------|-------------------------------|
| Copolymer        | Styrene-divinylbenzene        |
| Matrix           | Macroporous                   |
| Type             | Strong acid cation            |
| Functional Group | Sulfonic acid                 |
| Physical Form    | Gray, opaque, spherical beads |

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##### Nitrogen BET

|                       |                      |
|-----------------------|----------------------|
| Surface Area          | 53 m <sup>2</sup> /g |
| Total Pore Volume     | 0.40 cc/g            |
| Average Pore Diameter | 300 Å                |

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##### Chemical Properties

|                               |                |
|-------------------------------|----------------|
| Ionic Form as Shipped         | H <sup>+</sup> |
| Concentration of Acid Sites † | ≥ 4.70 eq/kg   |
| Catalyst Volatiles            | ≤ 1.6%         |

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##### Particle Size §

|          |        |
|----------|--------|
| < 300 μm | ≤ 0.5% |
| < 425 μm | ≤ 2.0% |

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##### Swelling (in solvent)

|        |     |
|--------|-----|
| Phenol | 38% |
|--------|-----|

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##### Density

|                 |         |
|-----------------|---------|
| Shipping Weight | 610 g/L |
|-----------------|---------|

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† Dry Weight Capacity ≥ 4.70 eq/kg

§ For additional particle size information, please refer to the [Particle Size Distribution Cross Reference Chart](#) (Form No. 45-D00954-en).

## Suggested Operating Conditions

|                                     |                                    |
|-------------------------------------|------------------------------------|
| Maximum Operating Temperature       | 120°C (248°F) in non-aqueous media |
| Bed Depth, min.                     | 600 mm (2.0 ft)                    |
| Pressure Drop, max.                 | 1 bar (15 psig) across the bed     |
| Flowrates                           |                                    |
| Linear Hourly Space Velocity (LHSV) | 0.5 – 5 h <sup>-1</sup>            |

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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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