

AB™ Series Catalysts

AB™ series catalysts are the solid and synthetic zeolite catalysts used for vapor-phase alkylation of benzene to ethylbenzene. As compared to the AlCl₃-catalyzed liquid phase process, the vapor-phase alkylation has several advantages, such as no equipment erosion, environmental friendship and energy saving. SRIPT has spent several years of investment and research manpower in the development of AB™ series catalysts for this vapor-phase process since the early 1990s. AB-96™ and AB-97™ catalysts were commercially employed in three Mobil/Badger-licensed process plants in China.

Physical properties

| | |
|----------------------------|-------------------|
| Main phase: | ZSM-5 and alumina |
| Appearance: | white pellet |
| Size, diameter×length, mm: | 1.5~1.6×2~13 |
| Bulk density, g/ml: | 0.60~0.64 |
| Crush strength, N/cm: | 70~80 |

Performance

| Catalyst | T _{inlet} °C | Pressure, MPa | B/C ₂ ⁼ , mol/mol | C ₂ ⁼ WHSV, hr ⁻¹ | C ₂ ⁼ conversion | EB+PEB selectivity | Cycle length, day | Service life, y |
|----------|--------------------------|------------------|--|---|---|-----------------------|-------------------|--------------------|
| AB-96™ | 411 | 2.03 | 7.0 | 1.65 | 99.88 | 99.57 | 180 | 2~3 |
| AB-97™ | 388 | 1.70 | 6.5 | 2.19 | 99.95 | 99.65 | 540 | 2~3 |

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