LUXFER
MEL TECHNOLOGIES

DATASHEET • 1094

Zirconium Hydroxides for Sorption Applications

Our capability

Luxfer MEL Technologies supplies both doped and undoped zirconium hydroxides for a use in a wide range of sorption applications. (Oxides forms can also be supplied if required).

Materials are solid powders, with tunable properties resulting from our proprietary manufacturing processes. These are carried out at multi-ton scale.

Advantages

Easy separation from reaction media

- Sorbent can be easily separated from the adsorbate media.

High surface area

- Greater interaction with adsorbates.

Structure

- They have developed (tunable) pore structure.

High capacity

- Large number of active sites and strong interactions with adsorbates.

Physical properties

Table 1. Undoped zirconium hydroxide examples

	MELSorb Family			
	XZO631, XZO632	XZO1247	XZO1501	XZO2916
D_{50} (µm)	~1 (631) ~25 (632)	~5	~25 (broad)	~25 (broad)
Porosity (cm^3/g)	>0.2	>0.3	>0.55	>0.65
Surface area (m^2/g)	>300	>350	>300	>350

Typical dopants

Surface chemistry can be modified by selecting appropriate dopants, e.g. acidic (SO_4, SiO_2), basic (MgO, La_2O_3), redox (CeO_2).

Applications

Removal of toxic and unwanted species from both gaseous/vapor and liquid phases.

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