



**Christy Catalytics, LLC**  
4641 McRee Avenue  
Saint Louis, MO 63110 USA

**314.773.7500** *telephone*  
314.773.8371 *fax*  
www.christyco.com

**Innovators Of Industrial Ceramic Products**

## **RECLAIMED CATALYST SUPPORT MEDIA**

Some refineries and chemical plants are reusing their previously used catalyst support media. Some are purchasing previously used support media from ex-situ catalyst regeneration companies or metals reclaimers. Although the economics of these practices may be attractive in some situations, users of previously used catalyst support media should be aware of the potential problems:

Catalyst support media tend to exhibit scavenging capacity for various contaminants. Some are installed specifically for trash collection. Some may chemisorb sulfur or chlorine. Some may adsorb heavy metals. The surface trash collection and the sorption phenomena can be reversible when previously used support media are subsequently reused in a different unit, thereby resulting in catalyst poisoning.

Physical properties of catalyst support media, especially vitrified media, previously used in high pressure hydrogen service can be severely degraded. In addition, the vessel unloading and subsequent reclamation processes can degrade physical properties such as crush strength and impact resistance which are key to catalyst support performance. Subsequent reuse can result in excessive breakage to chips and fines and, in turn, cause pressure drop and flow distribution problems within the reactor and plugging problems downstream.

Catalyst support media flushed from a unit or washed following prior use may be contaminated with soda or caustic or other potential catalyst poisons. Unless thoroughly cleaned, many of these poisons are leachable during subsequent reuse, resulting in loss of catalyst activity.

The potential problems associated with the reuse of previously used inert catalyst support media tend to be exacerbated by the way in which these products are handled. Typical handling procedures seem to fly in the face of quality standards such as ISO 9001:2000. Previously used support media are frequently accumulated based only on size and records on prior use tend to be sparse. "Lot analysis" from such accumulations may not represent or may totally mask the potential problems previously used catalyst support media may cause.

It is true that the price of a new charge of inert catalyst support media may appear to be less attractive than the price of previously used material. But it is also true that the price of a new charge of inert catalyst support media is generally very low relative to the price of the catalyst it is purchased to protect, and extremely low relative to the cost of the potential problems which can result from the reuse of previously used inert support media.