

How Spent Precious Metal Bearing Catalysts can be Moved Around the Globe Quickly and Cost Effectively



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discuss how spent precious metal bearing catalysts can be moved around the globe quickly and cost effectively.

If one was responsible for the precious metals in 500 000 lbs of spent process catalysts, perhaps containing many millions of dollars' worth of platinum, palladium, ruthenium, rhodium, rhenium and/or other valuable metals ready for recovery and refining, how would one ship them from Warsaw to Williston? Or from Santiago to Scottsville? You may be thinking that it is not an easy task and, of course, it is not. Think about this: When slipping spent precious metal bearing catalysts beyond the borders of the US, you must comply with a labyrinth of complex domestic and international rules, regulations, permits, and many other road blocks. How is this accomplished when a 500 000 lb lot of process catalysts must be stored and then shipped to one of three recovery and refining facilities? Like many other complexities in our fast paced daily life, one needs a specialist to sort this out.

Transport Logistics

Sabin International Logistics Corporation (SILC) is part of the global Sabin Metal Group of Companies and is responsible for arranging transportation of customers' spent process catalysts from virtually any point on Earth to Sabin's recovery and refining processing facilities.

The process begins with SILC's staff obtaining relevant information from the catalyst owner concerning lot size, materials type, classification, anticipated shipment readiness date and, in the case of international shipments a review relating to US importation. Once these steps are completed transportation arrangements begin. For international shipment, the logistics crew obtain and prepare documents necessary for importing the catalysts such as ocean bills of lading, commercial invoices and packing lists. Once the relevant information is obtained and the customer is ready to ship the catalyst, they will advise when they can fill their shipping containers, such as SA-BIN® secure containers (Figure 1). The company needs to know how many containers are required as well. For the domestic customer base, SILC will arrange truckload deliveries of empty SA-BINs; once they have been filled, the customer will notify the firm and transport from their site to a refining location can be arranged.



Figure 1. SA-BIN secure containers store spent precious metal-bearing catalysts for fast and hassle free shipping directly to the company's refining facilities.

With regard to international customers, SA-BINs are shipped directly to their processing facilities. SILC's staff begins working with freight forwarders to determine proper routing as well as to obtain motor freight, rail, and/or ocean shipping lines' transport schedules. Transocean shipping alone is quite complex since, for the most part, determining the best methods for overseas shipping are based upon vessel sailing schedules and the most efficient routing.

For incoming overseas shipments, SILC plans the inland transportation arrangements well in advance of a vessels arrival to the port of entry (POE) to minimize delays. Once the filled SA-BINs reach the POE, the containers in which they are shipped are unloaded from the vessel (Figure 2). By that time inland transportation arrangements are already in place to facilitate the delivery of the SA-BINs from the POE to one of the company's two US refining facilities in Williston, North Dakota or Scottsville, New York. SILC's staff recognize that its customers are obviously interested in knowing the status of their shipments while in transit so they routinely monitor their status and provide customers with updates throughout the transit, up to the time they are received at the company's refining facility.

Sometimes the whole process can take up to one year because of the maze of requirements; however, sometimes it can take just a month.

To speed and simplify the entire transportation chain, SILC typically uses one or more forwarding agents who are familiar with Sabin's business in general, and catalyst recovery and refining procedures in particular. These forwarders maintain a

network of agents throughout the world. On the other hand, many times Sabin's customers are familiar enough with local and/or national customs regulations that they can also help facilitate export clearance for their spent catalyst lots.

Security, Safety and Convenience

To maximize efficiency and further help streamline this process, SILC recently introduced its unique storage/shipping containers: SA-BINs. These are sent by SILC to customers worldwide for securely storing their spent catalysts prior to shipping. SA-BINs not only add convenience with regard to storing spent precious metal bearing catalysts, they also speed and simplify the process of unloading reactors. Plus, SA-BINs provide security for their valuable contents. SILC handles all arrangements for shipping SA-BINs to and from customers' facilities.



Figure 2. For transocean shipping, SA-BINs are stored inside ISO standard intermodal shipping containers for security, safety, and ease of handling.

Licensed Freight Brokerage

SILC, which was established in 2005, is also a licensed freight broker. This credential allows the company to arrange for the transport of oversize and/or overweight loads directly to its domestic processing facilities. The company has a network of carriers that it works with when a customer needs to have an 80 000 lb reactor sent to the Sabin Scottsville refinery, for example. The firm is able to provide this transportation based on a network of carriers that specialize in these kinds of unusual requirements.

A typical overseas spent catalyst shipment, perhaps from an oil refinery in Abu Dhabi or a petrochem refinery in Brazil would work something like this: First, the catalyst owner advises SILC on the pending shipment of spent precious metal bearing catalysts. SILC's people discuss the shipment with an international freight forwarder which contacts a local freight forwarder in the exporting country to help facilitate transportation arrangements and, in some cases, assist the customer with documentation requirements or other requests.

This process is usually done quickly: it is also done simultaneously when there are split shipments of spent catalysts that are scheduled for recovery and refining in two different Sabin processing facilities. Obviously, time is of the essence with regard to faster settlements for the customer so as to eliminate or minimize the need for purchasing or leasing replacement precious metals for a new catalyst campaign SILC processes shipments simultaneously in order to speed up the process.



Figure 3. To further assure security of spent precious metal-bearing catalysts, SA-BIN's are sealed at their tops with a locking ring (with tamper evident cable) surrounding the lid and top opening.

Prior to the introduction of SILC's SA-BINs, there were occasional issues concerning how a customer might load and safely store large volumes of spent catalysts prior to shipment to a Sabin recovery and refining processing facility. Depending upon circumstances, spent catalysts were stored in drums or other types of shipping containers. SA-BINs are significantly easier and faster to load than standard storage shipping drums. A SA-BIN will typically contain approximately 3000 lbs of material: this is approximately eight to ten times more material than a single 55 gallon drum. They are also more durable than "supersacks," which might tear or tip over during loading and/or shipping. Also, from a cost perspective, SA-BINs offer significant savings versus supersacks or drums since they are supplied at no charge by the company.

SA-BINs are filled from the top after a catalyst campaign, and they are emptied from the bottom at the Sabin Metal refinery. To assure maximum storage and shipping security, their tops are sealed with a locking ring surrounding the lid and top opening. A tamper evident cable seal closure secures the lid in place (Figure 3). The bottoms of the SA-BINs also incorporate a locking mechanism with dual camshafts

which hold the slide gate closed. Once closed, the camshafts are locked (Figure 4) virtually eliminating all possibility of material leaking out during handling or transport.



Figure 4. A locking mechanism with dual camshafts on each SA-BIN virtually eliminates the possibility of materials leaking during handling or transport.

Conclusion

Keep in mind that in addition to shipping and handling issues, there are many other criteria to be aware of when working with a precious metals refiner. Among them are turnaround time, recovery/refining procedures such as sampling and assaying, and compliance with appropriate environmental regulations. These are considered the most critical issues to evaluate, since any relationship with a precious metals refiner essentially constitutes a "partnership," for better or for worse.