

# Klinge Temperature Control—An Active Refrigeration Model for Sea Transport and Local Storage Solutions

Klinge Corporation has long been known for its proven solutions in the Dangerous Goods market, where specialized dual-redundant shipping containers keep products at the right temperature, avoiding potentially catastrophic failures which could result in the loss of product, property and even human life.

Extending this philosophy of ensuring ultimate product safety in order to protect property and lives, Klinge has expanded in the past five years into the pharmaceutical sector and provides equipment for products requiring 2°C–8°C storage or storage from -20°C down to as low as -65°C based on documented testing, multi-year success stories and most recently, third-party validation completed in 2017.

Using the lessons learned in the hazardous goods industry, Klinge has developed equipment and Standard Operating Procedures which allow pharmaceutical shippers the ultimate peace of mind when putting their products on the ocean. Renewed interest from vessel operators/steamship lines has also led to an upsurge of service level agreements with which pharmaceutical companies are becoming increasingly comfortable.

Service in locations worldwide, technical support around the clock, and reliable (and redundant) design have all led customers to select Klinge's equipment when looking for local storage solutions. The increase in demand for moving pharmaceutical

equipment via ocean instead of air also means that companies will soon start to utilize these solutions for transport as the containerized systems were originally developed for the purpose of shipping via ocean, rail and road in both highly and ultra-insulated versions.

The fact that proven procedures for protecting cargo already exist in the sea freight industry means that there are solutions out there for pharmaceutical companies looking to improve their bottom line by avoiding costly excursions which can

occur using air services and passive shipping solutions, while also reducing the company's global carbon footprint. New GSM and satellite technologies for tracking and reporting data via web portals also allow a much higher degree of transparency and temperature monitoring during ocean transport.

Recent company announcements have seen some large pharmaceutical companies move more than 50% of their shipments by volume from air to ocean, and this trend seems set only to continue as air transport becomes more expensive and

temperature excursions in such transport (which, as noted, rely heavily on passive refrigeration systems) continue to occur.

In addition to its transportation and long-term storage options for pharmaceutical customers, Klinge provides leased equipment for freezer downtime or temporary production upticks. These same storage products can also be used for catastrophic backup in the case of failure of existing systems and are available in stand-alone or modular configurations, including anteroom chambers to minimize heat loss and moisture ingress into the colder storage containers.



**NMF-372—Deep Freezer Dual Redundant Container System:** Two Full-Capacity -65°C Freezer Units, Integral Genset for back-up power supply



**NMR-262—Nose-Mount Dual Redundant Container System:** Two Full-Capacity Refrigeration Integral Genset for back-up power supply

Klinge also manufactures tank containers for bulk liquid transport, split freezer systems for cold storage rooms (down to -65°C), explosion-proof equipment for the oil and gas/chemical sectors, quick-thawing equipment for meat distribution, military container systems for food and medical storage, and equipment for a large number of other special applications.

## KLINGE

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