



## OUT OF THE AIR AND ONTO THE ROAD

Although the expanse of Australia's wide brown land is a romantic vision, it can be a nightmare if you're trying to distribute temperature sensitive products interstate. In addition to distances of some 4,000 kilometres from Sydney to Perth (4-5 days road travel), there is also the complexity of having to deal with a range of ambient temperatures. For example, Melbourne's temperature may be 2°C, whereas Perth's temperature may be 40°C

Traditionally temperature sensitive products have been distributed via airfreight or refrigerated road transport. Although expensive, airfreight is often the preferred mode of transport, as it minimises the risk of a product suffering 'temperature abuse'.

In an effort to combat this expense, Eutectic technology has been developed and is being utilised by a number of companies. Novo Nordisk has recently begun using Eutectic technology to distribute its products. Novo distributes insulin and other pharmaceutical products centrally from its warehouse in Sydney's outer suburbs to all states in Australia. The freight is temperature sensitive and must be maintained between 2 - 15°C, or ideally between 2 - 8°C, at all times.

Dilshan de Silva, Novo's distribution and warehouse manager, recently read an article about Sigma Pharmaceuticals using a

passive refrigeration solution for chilled freight distribution, without using refrigerated vehicles. With this in mind, Dilshan decided to trial the CoolPac/OLIVO system as an alternative to Novo's current method of cold chain distribution.

The CoolPac/OLIVO system uses roto-moulded plastic containers with polyurethane insulation and eutectic plates to maintain the product temperature. Eutectic plates are likened to a gel brick, only far more sophisticated, with the liquid used inside the eutectic plate designed to freeze at different temperatures. This allows the same container to be used for frozen or chilled distribution simply by using a different eutectic plate.

Novo commenced preliminary validation work on the container (CoolPac/OLIVO Roll 1000) to see if it was suitable for its needs. A series of qualification trials were conducted from Sydney to Perth and Sydney to Cairns, where temperatures were often 35 °C for extended periods of time over the fiveday period. Each container was armed with nine computer data loggers which logged the temperature every 30 minutes, covering all





areas inside the container. The product was found to maintain the correct temperature for 5 days.

As the containers are reusable for many years, they had to be returned to Novo Nordisk in Sydney. Even with the company having to retrieve the container using reverse logistics, the saving was still much greater than if they had sent the product by air.

