

## SECTION 11 BULK LIQUIDS & GASES

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### 11.1 SAFETY PRECAUTIONS FOR DANGEROUS GOODS

Many of the products in this Section are **dangerous goods** and **all** should be handled with extreme care and caution.

During loading and unloading, the following safety requirements must be observed:

#### DO NOT...

- X** DO NOT **smoke**. NO SMOKING.
- X** DO NOT use **cell phones** or **radios** within 15 metres.
- X** DO NOT run petrol or diesel **engines** within 15 metres.



### 11.2 DOCUMENTATION & LABELLING DANGEROUS PRODUCTS

Refer to the following:

- ➔ Section 7 of this Manual
- ➔ Diagram 7.8 in this Manual for distribution of documentation.
- ➔ NZS 5433 for transport **within** one island (North or South).
- ➔ IMDG Code for transport **between** islands (Inter-Island).

#### NOTE...

- ➔ Empty moves, where the tank or line-haul unit has carried hazardous product and has not been made inert (not yet cleaned), must be handled and documented in exactly the same way as a dangerous goods loaded movement. This means that placards must be in place and a declaration made on the consignment note.

## 11.3 ULLAGE

Ullage is the free airspace left in a vessel or container to allow for expansion of the product.

On rail, the ullage for most liquid products is normally between 3% and 5%, although a greater ullage is often acceptable. LSM containers on milk trains, for example, may run partially full with no ullage restrictions.

Stricter ullage provisions apply to liquid products carried by road, and truck drivers must be competent in driving bulk liquid ('live') loads.

Dangerous goods have their own ullage requirements. See IMDG Code.

## 11.4 SPECIFIC GRAVITY

Specific gravity (SG) is a measure of density, It is the relative weight of a liquid compared to the weight of the same volume of water.

A specific gravity of 1.0 is the same as water. Numbers larger than this indicate that the liquid is more dense than water.

Example:

1000 litres of Water weighs 1000 kg.

Specific gravity of Sulphuric Acid is 1.8.

Therefore, 1000 litres of Sulphuric Acid weighs 1800 kg (water weight × 1.8).

## 11.5 LOADING & UNLOADING

### QUALIFICATIONS

Loading and unloading shall be carried out only at or in sidings by people who are **qualified** and **certified** by the producer company (or by subsidiaries of the producer) and/or at sites approved and certified by the parent producer.

### DECLARATION

Products 1–6 in 11.5 above require the following signed endorsement on the consignment note:

**'All caps and valves have been thoroughly inspected  
and found to be properly secured and sealed.'**

This endorsement may be pre-printed or stamped, but the **signature must be by hand**.

## 11.6 INTER-ISLAND MOVEMENT

### BOOKING OF FERRY SPACE

Space for dangerous goods consignments on the inter-island ferries is strictly limited. To confirm space, a **minimum of 12 hours notice** is required.