



## Segregate for safe transport and peace of mind

Dangerous goods transport is often considered to be quite complex with requirements for personal protective equipment (PPE), extra load restraint, licensing, segregation and more. Segregation is a loading control that, if overlooked when transporting dangerous goods, has the potential to be one of the most dangerous non-compliances.

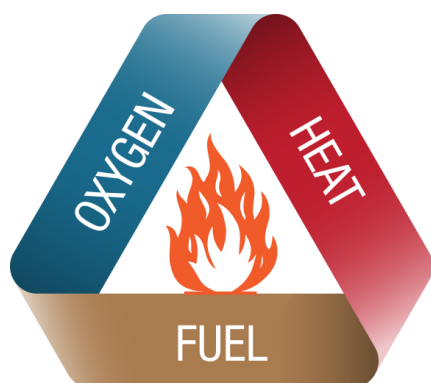


### How do we determine segregation requirements?

The first point of reference is a segregation chart, which can be found in Part 9 of the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code). It is quite common to see these on walls in depots and even in the truck with the driver. If you haven't seen a segregation chart before or you'd like to get one, it is available from the National Transport Commission website as part of the ADG Code. As well as containing the chart, Part 9 of the ADG Code also lists some specific items that cannot be transported together.

Another key location for guidance about segregation is the safety data sheets (SDSs) or material safety data sheets (MSDSs) for the products. These sheets contain useful information about the product, including whether it is a dangerous good and, if so, its class, U.N. Number and incompatible products.

## Why do we segregate some goods?



The simple answer is that some products are incompatible with others. For example, when some chemicals come into contact they react and release heat or other undesired products. Class 3 goods are incompatible with Division 5.1 goods because if there is a fire, it will be extremely intense as the products form two sides of the fire triangle. Class 3 is the fuel and Division 5.1 supplies the oxygen. There are also examples of products within Class 8 that are incompatible and can give off toxic gases and react violently.

The table lists examples of products that are incompatible and explains why.

Product 1		Product 2		Reason for segregation
Name	Class	Name	Class	
Pool acid (hydrochloric acid)	Class 8	Pool chlorine (sodium hypochlorite)	Class 8	When these two products come into contact, they react to give off chlorine gas, which is toxic.
Acetylene	Division 2.1	Calcium hypochlorite	Division 5.1	If there is a fire involving the acetylene, the calcium hypochlorite could provide oxygen and significantly intensify the fire.
Toxic, infectious, radioactive or corrosive substances	Divisions 2.3, 6.1 and Classes 7 and 8	Food or food empties	Not applicable	To avoid the contamination of food products or food empties used for people or animals.
Sodium cyanide	Division 6.1	Acids	Class 8	When these products come into contact, they react to give off hydrogen cyanide gas, which is toxic.
Strong acids	Class 8	Strong bases	Class 8	When these products come into contact, they can react violently and produce large amounts of heat and toxic gases.

## How can we segregate incompatible goods?

The dangerous goods transport regulations for segregation apply to the transport of placard loads, and options to segregate incompatible goods are given in Part 9 of the ADG Code. Options include using:

- separate vehicles (e.g. load flammable liquids on the lead trailer and oxidisers on the rear trailer)
- separate freight containers, approved large packaging or approved packagings for segregation that can be carried on the same vehicle
- segregation devices, such as Type I devices (<450 litres capacity) or approved Type II devices.

Even when transporting minor quantities of incompatible goods below the placard load threshold, it is better to segregate them as there can still be severe consequences. For peace of mind, you could transport the incompatible goods on different vehicles, use segregation boxes or an overpacking drum.



*Example of a segregation box*

## Take-away message

Segregation may be seen as inconvenient in some situations but it is important to remember that the wrong combination could have disastrous consequences.

If you are unsure about segregation then use the resources available or consult a chemical expert.