

Bulletin 437 - 10/05 - Illegal Shipments of Thiourea Dioxide - China

A US court has recently found an American manufacturer 100% liable for losses arising from one of the worst containership fires (the 'DG Harmony') because of insufficient warnings being given as to the risk of explosion in a shipment of calcium hypochlorite.

This bulletin highlights several recent incidents where shippers have been found shipping another chemical - Thiourea Dioxide - under another name and even declaring the substance as not dangerous.

In recent months chemical products manufactured in China under the name of 'Thiourea De' and 'Thiourea D' have been offered for shipment. The material safety data sheet provided by one manufacturer of 'Thiourea De' describes the product as a white solid that may decompose on exposure to moist air. The chemical formula is stated to be very slightly different from Thiourea Dioxide. A declaration originating from the manufacturer describes the chemical as a white crystalline powder that is very stable and it appears to suggest that the material does not decompose explosively in contact with moisture.

In a recent incident a chemical declared to be 'Thiourea De' was found by chemical analysis to be Thiourea Dioxide. This had decomposed violently in a container producing highly toxic sulphur dioxide that contaminated the contents of other containers. A heavy sulphurous residue covered the surfaces of the hold and its contents. Expensive decontamination and cleaning operations were required.

Thiourea Dioxide is a white to weak light yellow crystalline powder. It is an IMDG Class 4.2 material that is normally shipped in sealed drums. It readily oxidises in air and in contact with readily oxidisable organic material may cause ignition and a fire. In contact with moisture or water it may generate heat, causing ignition. In contact with acids it will produce highly toxic sulphur dioxide. High humidity, contamination and impurities are believed to be factors that independently or in combination can cause the material to decompose violently at normal ambient temperatures.

'Thiourea De' and 'Thiourea D' are not recognised shipping names. If such material is offered for shipment, any declaration made to the effect that it is not Thiourea Dioxide should be treated with circumspection. Thiourea Dioxide is banned from carriage on many Members' ships.



Source of information: Chris Foster of Dr J H Burgoyne & Partners LLP
UK Club Carefully to Carry Committee Member

Please also see [Loss Prevention Bulletin 337](#)