



Ref. T3/1.01

DSC/Circ.27  
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## **EXPLOSION IN A CARGO HOLD LOADED WITH RECYCLED ALUMINIUM**

1 The Sub-Committee on Dangerous Goods, Solid Cargoes and Containers (DSC), at its ninth session (27 September to 1 October 2004), considered the casualty report of the explosion in a cargo hold of a ship which occurred on 2 December 2002, resulting in injuries to crew members and the subsequent loss of the ship.

2 At the time of the accident, the ship was carrying an aluminium oxide cargo originating from the processing of recycled aluminium (brand-named "Serox" or "Oxiton") which is used for cement production. This cargo had been carried as non-dangerous goods since its introduction as "Serox" or "Oxiton".

3 The accident was reported to have been caused by the fact that the cargo came into contact with water resulting in generation of flammable gas at a speed which resulted in the formation of an explosive air/gas mixture in a closed and poorly ventilated hold. Through the investigation of the casualty, this cargo was classified as a class 4.3 product under UN. 3170 "ALUMINIUM SMELTING BY-PRODUCTS", but it was not documented as such by the shipper.

4 Similar accidents have occurred in the past and to prevent such accidents when carrying these cargoes, all requirements for the carriage of dangerous goods should be strictly observed, in particular:

- .1 requirements of documentation for cargo as required by regulation VII/7-2 of the SOLAS Convention;
- .2 the general requirements of the BC Code; and
- .3 requirements of the entry for ALUMINIUM SMELTING BY-PRODUCTS UN 3170 in the Code of Safe Practice for Solid Bulk Cargoes (BC Code), including continuous mechanical ventilation.

5 The "Hazard" section of the BC Code schedule for UN 3170 indicates possible formation of gas such as Hydrogen, Ammonia and Acetylene. It should be noted that in this incident and others of a similar nature that the smell of Ammonia, a gas, was noticed during cargo operations. The presence of Ammonia would generally indicate the presence of additional gases which may be flammable. It is therefore advisable that if Ammonia is found present, suitable preventive measures are taken as further outlined.

6 Member Governments are invited to bring the above information to the attention of shipowners, ship operators, companies, shipmasters, shippers and all other parties concerned, requesting that appropriate action be taken when transporting such cargoes.