



# LP Bulletin

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## Bulletin 1163 - 01/19 - Aluminium Dross - dangerous or not

**The UK P&I Club and the TT Club have recently been advised that a consignment of aluminium pellets (or dross) was found at the port of loading with the doors and sides of the container blown out. The terminal arranged for samples of the commodity to be tested by a laboratory, on the basis that there was no evidence that the unit had been dropped during handling.**

The test results showed that aluminium dross is highly susceptible to a reaction with chlorides in the presence of moisture. The commodity produces gases when exposed to moisture and the build-up of gasses was considered the most likely cause of the container exploding. The container itself was damaged beyond repair, but no further issues arose in this instance. On further enquiry, while not a common occurrence, it is known that this does happen from time to time; some lines and ports are understood to be refusing this commodity.

By way of background, it would seem that at the time the material is tested, prior to filling the container and shipment, the moisture level is such that the reaction with the commodity does not generate gas at a rate sufficient to meet the UN hazard class 4 criteria. However, clearly the reaction is slow, so over a period of time there is the potential for an explosion. This may – as here – deform the side panels, but has been known to have sufficient force to “pop” the container where it is joined to the frame.

Such a commodity is a by-product and usually being transported for some kind of recycling. It may be known as aluminium dross or even processed waste, perhaps from a waste shredding process. By definition, such materials are variable in both physical and chemical composition. While there may be evidence that at the time of testing there was insufficient moisture to create a reaction which generates sufficient hydrogen to meet the test criteria, it may additionally not be known how the product has been stored or weather conditions before or at the time of being put in the cargo transport unit.

Since the commodity may be hygroscopic, working with the shippers to reduce any time between testing and packing may assist in ensuring that representative sampling and testing are improved. It may also be helpful to seek longer test periods for such materials prior to shipment. If the product meets the Class 4.3 criteria, it should be declared as UN 3170, noting the application of Special Provision 244 relating to ventilation and protection against water ingress throughout the intended journey.

The Club recommends that carriers work with shippers on any bookings for recycled aluminium carried in bulk in containers to gain greater certainty about pre-shipment controls necessary to prevent excessive moisture content that may cause a build-up of gasses during transit.

### **Source of Information**

Loss Prevention