

# CALCIUM HYPOCHLORITE: IT'S BACK AND HIDING IN PLAIN SIGHT

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**The often dramatic risks associated with transporting calcium hypochlorite first came to light in the 1970s in a series of serious incidents involving US and Japanese producers. Casualties in the 1990s including (it has been suggested) “CONSHIP FRANCE”, “DG HARMONY”, ACONCAGUA” and “CMA DJKARTA” brought the problem back into the spotlight with increased awareness of operators to these risks.**

Calcium hypochlorite is often shipped in powder, granules or tablets as a white or yellowish solid. It is liable to exothermic decomposition at elevated temperatures, initiated by heat, impurities in the product or reaction with acids. The temperature at which self-accelerating decomposition commences can be as low as 50°C depending upon packaging. The potentially severe consequences of a casualty from calcium hypochlorite led to it becoming categorised as a dangerous cargo and included within the IMDG Code as a Class 5.1 oxidising agent (or on occasion a Class 8 corrosive).

Since the cargo has been categorised as an IMDG cargo, consistent with other IMDG cargos, some shippers have sought to misdeclare it, using euphemisms to avoid the increased rates associated with a dangerous cargo. They have been as misleading as “bleaching powder”, “water treatment compound”, “lime chloride” or “prechloroisocyanuric acid”. Such misdescriptions have obvious practical and legal difficulties for the carrier and show a cavalier approach to the safety of terminal and container vessel workers. Whilst there are admirable efforts in the container industry such as CINS (“cargo incident notification system”) which attempt to identify misdeclared shipments of all types, and their recent collaboration with the International Group on stricter guidelines for carrying calcium hypochlorite, this does not help where there is deliberate circumvention. For example, the new guidelines essentially add to the IMDG requirements and require plastic drums, adequate air circulation, a 45KG weight limit per drum and a maximum payload per container of 14MT.



However, the most concerning development is the rise in incidents allegedly caused by shipments fully declared and carried in accordance with the IMDG Code. The main producers of this chemical are now in China and India and so it tends to be shipped on East to West routes in hot and humid climates. At terminals, or on board, temperatures can reach the 50°C self-accelerating decomposition point. Transit via a container handling terminal in the Middle East where the container is left in the heat, even for a few days, could initiate heating. Reefers are one solution. Of course their efficacy require correct stowage and the continued operation of the refrigeration unit. Indeed, in the event of failure, a reefer can actually cause the heat produced by decompositions to accumulate faster. The new International Group guidelines do not mandate the use of reefers and a decision on their use versus dry containers is to be subject to risk assessment.

It is not hard to imagine further incidents caused by correctly declared and carried shipments of calcium hypochlorite. Certain Owners and major container lines have simply banned shipments of calcium hypochlorite originating from India or China. Shippers will still need to transport their product and will seek to avoid higher freight rates. This may result in calcium hypochlorite going back to being an undeclared cargo and we return full circle to trying to identify misdeclared cargos.

Either way, it is clear we are experiencing seemingly the most prolific spate of fires/explosions, allegedly linked to calcium hypochlorite in history. In the past few years, it has been suggested that the following vessels suffered fires at the hands of calcium hypochlorite: “CHARLOTTE MAERSK”, “AMSTERDAM BRIDGE”, “HANSA BRANDENBURG”, “NORTHERN GUARD”, “HANJIN ATHENS”, “MAERSK LONDRINA”, “HANJIN GREEN EARTH” and “MAERSK SEOUL”. What is most concerning are the lives lost – crew members providing in some cases truly impressive fire-fighting services.

However, this problem does not seem to capture the same interest of international bodies as other issues in container shipping. For example, the World Shipping Counsel has reported that on average (for 2011, 2012 and 2013) 733 containers were lost at sea per year, not including catastrophic losses. These will have been caused by various factors including stowage errors or stow collapses resulting from overweight containers. Therefore, in the last five years one could assume a maximum loss of around 3,665 containers from the world fleet from overweight containers. In contrast, according to Lloyds List Intelligence in the past five years or so there have been around 40 casualties reported to them where the cause is a fire/explosion on a container vessel. The cause of these fires will vary immensely though, as identified above, a significant proportion may be due to calcium hypochlorite.

With that in mind it is hard to understand why there has been such focus by the IMO on introducing mandatory rules requiring shippers to verify the gross mass of a container. Fires identified as possibly caused by calcium hypochlorite or other dangerous cargo result in damage to containers in far greater numbers than those lost overboard even before one considers vessel damage. Perhaps the time has come for this cargo to be once again given the close attention and regulation it requires.

HFW have been involved in many of the casualties mentioned in this article and have unparalleled expertise in container casualties of all types.

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