

Safety study grills the carriage of charcoal



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Carrying charcoal as cargo has led to 68 fires on containerships in eight years, with a new study published to try and help stamp out this scourge.

The Cargo Incident Notification System (CINS), a safety initiative representing container shipping lines and maritime insurance interests, has published a series of guidelines for the safe carriage of charcoal in containers.

The guidelines point out that the packaging, declaration and transport of charcoal must comply with the International Maritime Dangerous Goods (IMDG) Code.

Significant new provisions have been agreed upon by the International Maritime Organization and will come into transitional effect from January 1 with mandatory compliance required as of 2026. The amendment means charcoal will no longer benefit from any IMDG code exemption.

Fires involving containerised cargoes of charcoal typically arise due to the propensity of charcoal to self-heat.

If the charcoal is sufficiently active, or if it is warm or hot when stowed, then the oxidation process can proceed at a rate at which more heat is generated through oxidation than can be lost through natural cooling. This causes the temperature of the charcoal to rise, according to a study into charcoal fires at sea carried out by Burgoyne's, a consultancy.

The rate of oxidation of charcoal increases as temperature increases, so, as the temperature of the charcoal rises, so does the rate of oxidation. This, in turn, increases the rate of heat production and raises the temperature of the charcoal even more and, eventually, this process can result in the material becoming so hot that ignition occurs. This type of process is commonly referred to as self-heating.

American fire investigation consultants Jensen Hughes looked at a number of fires at sea involving charcoal cargoes last year and identified one particular type of charcoal that appears to be involved in fires at sea more than others.

The cargoes in these particular incidents were in the form of charcoal discs or tablets, also known as hookah coals, shisha coals, hookah charcoal, shisha charcoal, nargila coal, coal discs or coal tablets. Used for heating tobacco for smoking in hookahs or water pipes, the tablets are typically packaged in foil tubes of around ten tablets and then packed in branded cardboard boxes.

It is estimated that global production of charcoal for domestic and export markets is over 50m tonnes per year. From the incident records created by CINS members, it is known that there were at least 68 fire incidents onboard ships between January 2015 and December 2022. Most of these incidents were caused by misdeclared cargo and therefore the carrier was not aware of the hazards presented.

"It is vital to ensure that this cargo is properly prepared, declared and packaged for safe transportation," the guidelines stress.

In the event of a fire at sea, stowage in an accessible location on deck should allow easier access to the container for firefighting, as compared to if the container was stowed below deck inside one of the cargo holds.