



Marine Notice No. 24 of 2009

*NOTICE TO ALL SHIPOWNERS, FISHING VESSEL OWNERS, AGENTS, SHIPMASTERS,
STEVEDORES, SKIPPERS, FISHERMEN AND SEAFARERS*

Off-gassing of Carbon Monoxide, Carbon Dioxide and Hydrogen Sulphide from certain cargoes

The Department of Transport would like to advise that a series of fatal accidents on board ships in Western Europe and other parts of the world have occurred recently on vessels presumed to be carrying safe cargoes:

- Two fishermen were killed when entering the hold of a fishing vessel that contained rotten fish;
- A seafarer was killed, a stevedore seriously injured and a number of other personnel were injured, including rescue personnel, when they entered an access stairwell to a hold that had previously contained wood pellets.
- Two seafarers were killed when they entered the hold of a vessel carrying timber logs.

These accidents occurred due to the presence of, respectively, **hydrogen sulphide (H₂S)**, **carbon monoxide (CO)** and **carbon dioxide (CO₂)** in the holds or hold access passageways and stairwells.

These gases are a product of auto-oxidation in wood pellets and the microbiological breakdown of the cargo material with regard to fish, wood-chips and pulpwood. Such processes are noted to accelerate where high ambient temperatures are experienced during the loading or carriage of the cargo. Ventilation of the holds for the purpose of dispersing such gases during the sea passage is not recommended as this may lead, by the introduction of oxygen into the air, to the spontaneous combustion of the cargo.

As a general principle, suffocating or toxic gases **should be presumed to be present** in an enclosed space that contains, or has recently contained, organic material.

Holds or adjacent confined spaces should not be entered until the atmosphere has first been tested and analysed.

Measurement of oxygen content alone should not be taken as indicating a safe atmosphere. For example, carbon monoxide and hydrogen sulphide may be present in toxic quantities in atmospheres that contain normal atmospheric oxygen content.

Personal atmospheric measurement devices should be capable of measuring not only oxygen content but also commonly occurring toxic and suffocating gases including, as a minimum, hydrogen sulphide and carbon monoxide. Such equipment should be carefully maintained, regularly tested and re-calibrated by competent technicians.

Presence of toxic gases have been detected in other “safe” cargoes, e.g. soya flour, paper-plastic pellets, peat pellets etc.

The Bulk Cargo Code should be consulted for information on all bulk cargoes, not only prior to loading, but also by stevedores and port operations before a vessel is discharged.

Entry into an enclosed or unventilated space should only take place after the space has been tested and proven to be free from toxic or suffocating gases.

Director General,
Maritime Safety Directorate,
Department of Transport,
Leeson Lane,
Dublin 2.

20 May 2009

For any technical assistance in relation to this Marine Notice please contact
The Marine Survey Office, Leeson Lane, Dublin 2., tel: +353 1 678 3400
For information in relation to technical specification/type approval of radio equipment
contact the Radio Surveyors, tel: +353 1 678 2363/2364/2365/2367.
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Any enquiries concerning Marine Notices should be addressed to:
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