

Notifications 202501
Friday, March 28, 2025

Carriage of Direct Reduced Iron (DRI)

Dear Members:

The IMSBC Code entry for DRI Type D differs substantially from the existing Type C entry: Both are for by-product fines, but the Type D entry recognizes the primary hazard of fines, which is hydrogen evolution due to reaction with water, rather than from self-heating via reaction with oxygen in air. The focus of the Code is therefore on the measurement and control of the hydrogen gas concentration by surface ventilation. This is unlike the other Code entries for DRI, where the basis for safety is the exclusion of both moisture and air.

Accordingly, Masters and crews will need to be appropriately trained in order to be prepared to contribute effectively to the assessment of the hydrogen evolution risk for a given voyage, with consideration of distances, speeds, the location of potential ports of refuge and weather conditions being factored in. In addition, a time-based gas prediction curve is plotted in order to estimate the length of time before the hydrogen concentration in each hold will reach the safety limit, this being 1% by volume, i.e. 25% LEL, and this data is then used to optimise a ventilation strategy. Typically, shippers would be expected to provide an expert cargo technician to assist with this process.

The cargo technician's role is defined in more detail in the Appendix to the schedule, and includes the following responsibilities:

- *monitoring during loading operations and providing advice as appropriate;*
- *advising on and supervising the installation of the thermocouples for temperature measurement;*
- *monitoring and reporting on the cargo parameters (temperature and gas concentrations);*
- *assisting and advising the Master and crew in the development of the time-based gas prediction curve;*
and
- *advising and coordinating with the Master and crew in connection with the operation of the ventilation system during the voyage.*

Additional information can be found in the IIMA publication, 'Direct Reduced Iron By-Product Fines (DRI D): A Guide to Handling, Storage & Shipping' found on the IIMA website- www.metallics.org

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