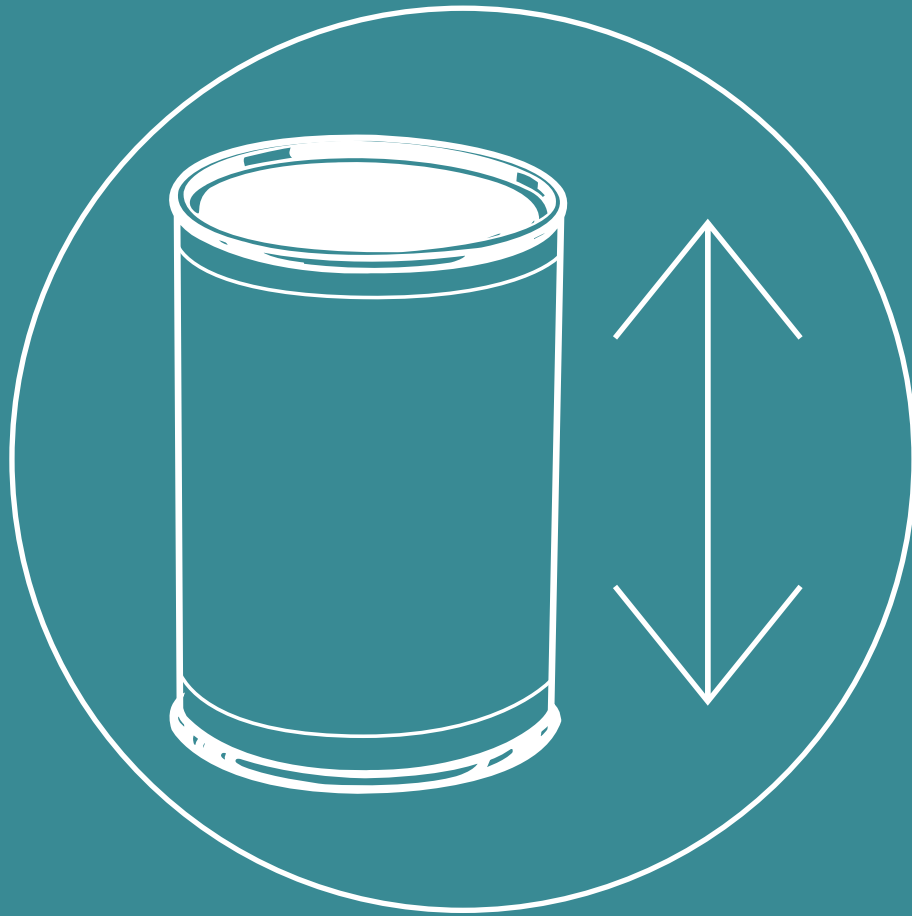


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Bulk Cargo Liquefaction The Can Test

Participant Workbook

Participant's Workbook

The problems associated with IMSBC Code Group A cargoes, those “which may liquefy if shipped at a moisture content in excess of their transportable moisture limit” are well known. There have been a number of vessels in recent years that have experienced liquefaction, leading to loss of life, ship and cargo.

This training session aims to support you in carrying IMSBC Code Group A cargoes safely and efficiently on-board your ships by instructing you on how to carry out the IMSBC Code's can test.

This workbook is purely for your own use. It gives you information, scenarios and places to write down your thoughts.

TOP TIPS!

You will learn and remember if you actively engage with your colleagues and throw yourself into the activities, even if you already have a good knowledge and understanding of the can test.

All discussions will be treated as confidential. Don't be afraid to make a mistake, or discuss near misses or incidents you have experienced, this is how we learn.

Write down what you remember from the videos on the 'post-its' provided in this workbook when asked to do so by your trainer.

Keep your REMEMBER IT card, found at the end of this booklet, with you every time you load a group A cargo.

Workbook (cont.)

WHAT'S ALL THE FUSS ABOUT?

The latest Intercargo Bulk Carrier Casualty Report attributes the loss of 102 seafarers' lives and 11 vessels to liquefaction incidents from 2005 - 2015, with a further incident occurring in 2017 which resulted in the loss of a further 10 lives.

When vessels are lost to liquefaction the capsizes usually occurs quickly and often results in heavy loss of life- as you can see from the graphic.

LOSS OF LIFE FROM LIQUEFACTION INCIDENTS

BLACK ROSE | 09 SEPT 2009



VINALINES QUEEN | 25 DEC 2011



EMERALD STAR | 13 OCT 2017



JIAN FU STAR | 27 OCT 2010



HARITA BAUXITE | 17 FEB 2013



NASCO DIAMOND | 10 NOV 2010



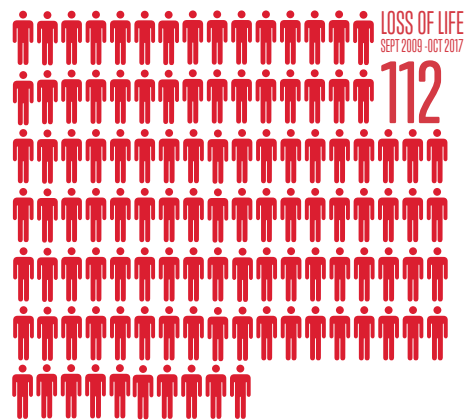
BULK JUPITER | 02 JAN 2015



HONG WEI | 03 DEC 2010



ALAM MANIS | 17 JUL 2015



The IMSBC Code places the responsibility for providing safe cargoes with shippers, but ultimately it is **you** who will sail on the ships carrying cargoes that may liquefy, it is in your interests to take steps to keep yourself and your ship **SAFE**. To do this you will need to **KNOW** things, and you will have to **DO** things. This training will support you with both.



Workbook (cont.)

CHOOSE YOUR CAN

Watch the video clip and then identify which containers are suitable for the CAN test.



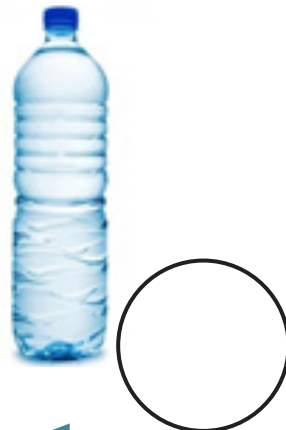
0.5ltr



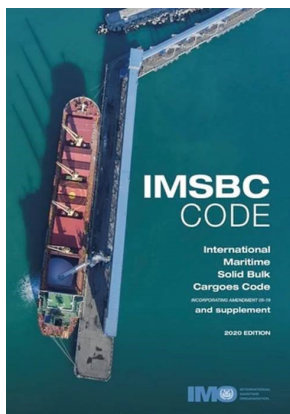
0.5ltr



10ltr



1ltr



MAKE A NOTE OF THE THREE IMSBC CODE CONTAINER CRITERIA HERE:

.....

.....

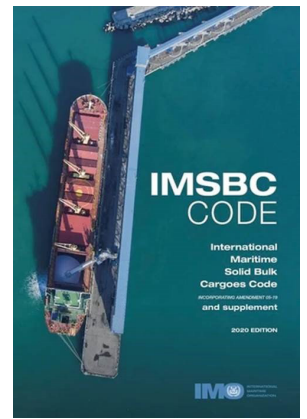
.....

Workbook (cont.)

BANG THE CAN

Carry out a can test.

MAKE A NOTE OF THE FIVE IMSBC CODE
CAN TEST PROCEDURES IN THIS BOX.



A large rectangular area with a light gray background and horizontal dotted lines, intended for participants to write down the five IMSBC Code can test procedures.

Workbook (cont.)

THE RESULTS

Compare your samples with the images and criteria below and tick the criteria that match your sample.

Remember that the can test does not show you that a cargo is 100% safe to load, it can only show you if a cargo has a higher risk or lower risk of liquefaction or dynamic separation.



LOWER RISK

- Free particles
- Not flattened out
- No free water on surface



HIGH RISK

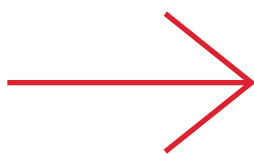
- Completely flattened out
- Looks like a liquid
- Flows like a liquid
- Moves in the can
- Free water on surface



NEXT ACTIONS

Think back to the video. Complete the table below with your actions in the event the can test shows a high risk cargo sample.


HIGH RISK



--	--	--

IF UNSURE: WHAT SHOULD YOU DO?

Workbook (cont.)

Now think of the actions that should be taken even if the can test shows a lower risk cargo.



REMEMBER

A can test does not confirm that a cargo is safe to load - only that it is potentially **UNSAFE** to load.

LOOK OUT FOR

Remember to look out for other unusual signs after the can test. A good example is if the cargo compacts over 50% of its original volume during the test, just like in this picture.

KEEPING SAFE

The key points relating to can testing are listed below and are included on a separate pocket card along with details of further useful information on carrying bulk cargoes safely.



THE CAN TEST

a rigid cylindrical can - (0.5 to 1 L capacity).

half fill with a sample of the material.

bring it down sharply from a height of about 0.2 m

Repeat 25 times - at 1 – 2 second intervals.

Take high definition pictures and video

Examine the surface for free moisture or fluid conditions.

If free moisture or a fluid condition appears **DO NOT LOAD** and **SEEK ADVICE**.



Contact our Loss Prevention team
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