ANY OTHER BUSINESS

Report of the Informal Industry Correspondence Group on Preventing the use of counterfeit refrigerants

Submitted by the Institute of International Container Lessors (IICL)

SUMMARY

Executive summary: This document provides the outcome of the Informal Industry Correspondence Group on Preventing the use of counterfeit refrigerants

Strategic direction: 5.2

High-level action: 5.2.3

Output: No related provisions

Action to be taken: Paragraph 7

Related documents: MSC 93/22; DSC 17/13/6, DSC 17/17; DSC 18/5/1, DSC 18/5/5, DSC 18/WP.3, DSC 18/13; CCC 1/INF.29; CCC 2/14/2 and CCC 3/INF.12

Background

1. At DSC 17, the United States and ICHCA presented document DSC 17/13/6 concerning reports of incidents involving the use of counterfeit refrigerants and proposing amendments to the IMDG Code, the development of guidance on the safe use of refrigerants in the IMO/ILO/UNECE Guidelines for packing of cargo transport units and the development of reporting requirements for incidents involving refrigerated containers and containers in general.

2. Having noted the information provided by IICL that the industry was working on guidance on the issue, the Sub-Committee invited the industry to submit, through the IICL, a document on preventing the use of counterfeit refrigerant to DSC 18. Subsequently, the Sub-committee agreed in general to the proposals for preventing the use of counterfeit refrigerants contained in document DSC 18/5/1, and encouraged IICL to develop industry best practices as outlined in the document (DSC 18/13, paragraph 5.6).
During the period between DSC 18 and CCC 3, ASHRAE International and the Air Conditioning, Heating, and Refrigeration Institute (AHRI) have performed analyses and reviews of the impact on R-40 as a contaminant in refrigerant gas supplies. While these analyses were being conducted, the Informal Industry Correspondence Group continued to encourage industry's use of the steps recommended in document DSC 18/5/1 to reduce the risk of R-40 contamination in refrigerated container machinery. It is noted that there have been no reported major casualties/incidents involving refrigerant gas during this period.

AHRI has determined that a level not exceeding 300 parts per million (300 ppm) of R-40 contamination in refrigerant gas supplies is acceptable and has included that determination in AHRI Standard 700-2016\(^1\). The steps previously recommended by the Informal Industry Correspondence Group, and specifically the usage of the halide torch test or other tests with a similar sensitivity test, would ensure levels of R-40 in conformance with the AHRI determination. The Informal Industry Correspondence Group has therefore decided to amend the recommended steps accordingly, and to rename them as Industry best practices for preventing the use of counterfeit refrigerants. They are set out in paragraph 6.

The following organizations participated in the work of the Informal industry Correspondence Group (non-governmental organizations in consultative status with IMO are shown in bold font):

INTERNATIONAL CHAMBER OF SHIPPING (ICS)
BIMCO
ICHCA INTERNATIONAL Ltd. (ICHCA)
EUROPEAN CHEMICAL INDUSTRY COUNCIL (CEFIC)
INSTITUTE OF INTERNATIONAL CONTAINER LESSORS (IICL)
WORLD SHIPPING COUNCIL (WSC)
AIR-CONDITIONING, HEATING, AND REFRIGERATION INSTITUTE (AHRI)
AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS (ASHRAE)
CONTAINER OWNERS ASSOCIATION (COA)
CAMBRIDGE REFRIGERATION TECHNOLOGY (CRT)
ETS CONSULTING
TT CLUB

**Industry best practices for preventing the use of counterfeit refrigerants**

6

**STEPS TO REDUCE THE RISK OF R-40 CONTAMINATION IN REFRIGERATION CONTAINER MACHINERY:**

.1 **KNOW YOUR SUPPLIER**

Obtain refrigerant from a trusted and well-known supplier that can provide traceability.

.2 **VERIFY REFRIGERANT IN CYLINDERS BEFORE USE** (see also annex 1)

Verify, prior to use, refrigerant in new and recovery cylinders to ensure authenticity of the refrigerant and compliance with AHRI Standard 700-2016 using a halide torch test, or other test which has a sensitivity level no less than the halide torch test, when permitted in conformance with applicable laws and regulations.

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\(^1\) Link: [http://www.ahrinet.org/App_Content/ahri/files/STANDARDS/AHRI/AHRI_Standard_7002016_with_Addendum_1.pdf](http://www.ahrinet.org/App_Content/ahri/files/STANDARDS/AHRI/AHRI_Standard_7002016_with_Addendum_1.pdf)
.3 VERIFY REFRIGERANT IN REFRIGERATION MACHINERY SYSTEMS SUSPECTED OF BEING CONTAMINATED WITH R-40 BEFORE REPAIRING/SERVICING THE MACHINERY (see also annex 2)

.1 for refrigeration machinery systems suspected of being contaminated with R-40, verify prior to repair, service or transfer to other owners, the compliance of the refrigerant with AHRI Standard 700-2016\(^2\) using a halide torch test or other test in conformance with applicable laws and regulations;

.2 should contamination be detected by the aforementioned test, additional testing procedures should be conducted to determine if R-40 contamination in excess of 300 ppm is present in the refrigeration system. Recording of results of such additional tests is recommended; and

.3 testing refrigerant in systems prior to removing the charge can also prevent possible contamination of recovery equipment and recovery cylinders.

.4 PROPERLY LABEL AND ISOLATE CONTAMINATED REFRIGERATION MACHINERY SYSTEMS

.1 properly label all refrigeration machinery systems that, after the aforementioned test procedures, have been determined to be contaminated with R-40 exceeding the 300 ppm level specified in the AHRI Standard 700-2016; and

.2 quarantine such machinery systems until they can be dealt with safely.

Action requested of the Sub-Committee

7 The Sub-Committee is invited to note the information provided and take action as appropriate.

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\(^2\) Refrigerant shall contain no more than 300 parts per million (ppm) of R-40.
ANNEX 1

REFRIGERANT GAS CHECKING PROCESS

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Based upon AHRI White Paper: Reports of R-134a Contaminated with R-40 and Other Refrigerants
http://www.ahrinet.org/App_Content/ahri/files/Product%20Section/AHRI_R_40_Contamination_white_paper.pdf

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ANNEX 2

VERIFICATION OF REFRIGERANT IN REFRIGERATION MACHINERY SYSTEMS SUSPECTED OF BEING CONTAMINATED WITH R-40

Legend:
- Owner
- Depot
- Laboratory
- Decisions

Start Point
- Owner
  - Deposit preference - refrigerant test

Result
- Pass
  - Deposit
  - Inform test result
- Fail
  - Deposit
  - Extract gas sample, send to lab

Laboratory
- Performs lab test
- R-40 present
  - Yes
    - Inform deposit R-40 present and await further instruction
    - Deposit
    - No action on unit
    - Await further instructions
  - No
    - Other chlorine contamination - Subject to Owners decision and local rules and regulations
    - Yes
      - Inform deposit to decontaminate unit as per prior agreement between Owner and depot (Carry out refrigerant test - Pass)
      - Deposit
      - Repeat decontamination as per prior agreement between Owner and depot
    - No
      - Repeat decontamination as per prior agreement between Owner and depot

Inform deposit test result
- No
  - Inform deposit test results as per prior agreement between Owner and depot
  - Other information

Inform deposit test result

Repeat decontamination as per prior agreement between Owner and depot

Inform deposit test results as per prior agreement between Owner and the depot