Marine Safety Information Bulletin

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U.S. Coast Guard
Office of Design and Engineering Standards (CG-ENG)
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FM-200 Fire Extinguishing Agent Phasedown

This MSIB informs the Coast Guard Officers in Charge, Marine Inspection (OCMI) and the maritime industry that FM-200 (also known as HFC-227ea or heptafluoropropane), a fire extinguishing agent, is being phased down in production as part of the recent Environmental Protection Agency (EPA) rule[1] to reduce the production of greenhouse gases leading to global warming. FM-200 is used in fire extinguishing systems for machinery spaces and cargo spaces on uninspected vessels, commercial vessels, and public vessels. This rule does not prohibit the use of FM-200 to extinguish fire and vessel operators should not hesitate to use their existing fire extinguishing systems in case of a fire.

FM-200 is one of the hydrofluorocarbons (HFCs) being regulated by the EPA under the American Innovation and Manufacturing (AIM) Act. The EPA rule requires that the net U.S. production of HFCs be reduced to 15% of the baseline levels in a stepwise manner over the course of 15 years (2022- 2036).[2] The overall reduction in the net production of HFCs will result in a reduction of FM-200 availability. Over time, this could lead to a supply shortage for new FM-200 system installations and for charging existing systems following a system discharge and/or routine maintenance. The supply shortage may cause an increase in materials and maintenance cost, and could lead to systems being unserviceable or delays in completing maintenance. Vessels that have an inoperable fire suppression system are likely to receive a deficiency or be issued a do-not-sail order.

There exist alternative suppression technologies which are not being phased down as part of the EPA rule. These systems include, but are not limited to, clean agent NOVEC 1230 (FK-5-1-12), carbon dioxide, inert gas (Inergen), water spray and water mist systems. These extinguishing agents are type approved by the Coast Guard for the protection of machinery spaces and other spaces with flammable liquid hazards and should be considered as alternatives to FM-200 for new installations or for retrofit purposes to avoid the potential FM-200 supply shortage.

For existing vessel FM-200 systems, these alternative suppression systems may not readily be a one-to-one replacement. The modified system could possibly require more agent, or require a system redesign, retrofitting, or complete replacement to protect the same space. A complete system plan review and flow calculation will be required to verify that the modified systems provide an equivalent level of safety. Modification requests of these type approved systems and systems aboard USCG certificated vessels should be submitted to the appropriate USCG office for review prior to modification/installation.

Vessel owners should not hesitate to use their existing FM-200 fire suppression systems in case of emergency as the safety of the vessel, its crew, passengers, and waterway is paramount. Where maintenance and upkeep of the FM-200 system can be planned, such as hydrostatic testing of cylinders, they should be scheduled far in advance to ensure replacement FM-200 cylinders are available. Inspectors are encouraged to raise awareness to vessel owners of the EPA rule and phasedown of FM-200.

Questions concerning this notice may be forwarded to Coast Guard Office of Design and Engineering Standards at TypeApproval@uscg.mil.

This release has been issued for public information and notification purposes only.

[1] Phasedown of Hydrofluorocarbons: Establishing the Allowance Allocation and Trading Program Under the American Innovation and Manufacturing Act, RIN 2060-AV17, Document Number 2021-21030

[2] See addition information on HFC phasedown at https://www.epa.gov/climate-hfcs-reduction/final-rule-phasedown-hydrofluorocarbons-establishing-allowance-allocation