

UNDERWRITERS LABORATORIES INC. CERTIFICATION REQUIREMENT DECISION

This Certification Requirement Decision is prepared by UL LLC. It is normative for the applicable UL Product Certification Program(s); however, it is currently not part of the UL Standard(s) referenced below.

Product Category (CCN): SGKW, SOVQ

Standard Number: UL 471

Standard Title: Standard for Commercial Refrigerators and Freezers

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Section / Paragraph Reference: Supplement SB

Subject: SB5.1 Leakage Test

DECISION:

(New)

SB4.4 Products with a convenience outlet or similar power receptacle inside the refrigerated compartment

SB4.4.1 Products with an electrical outlet located inside the refrigerated compartment shall:

- a) Employ a protected cooling system and comply with the additional test requirements of SB5.1.5.2, or
- b) Be equipped with a refrigerant detection system that, when activated, deenergizes the electrical outlet(s)

SB4.4.2 With regards to SB4.4.1(b);

- a) The detector(s) shall comply with the Standard for Gas and Vapor Detectors and Sensors, UL 2075 or with the Standard for Electrical Equipment for Measurement, Control and Laboratory Use; Part 1: General Requirements, UL 61010-1, and
- b) The refrigerant leakage test of clause SB5.1.5 shall be conducted to verify the performance of the detection system.

SB4.4.3 For the purposes of this standard, the refrigerant detection circuit is considered to be a protective circuit.

SB5.1.5 Refrigerant Leakage in products with an electrical outlet inside the refrigerated compartment.

SB5.1.5.1 With regards to SB4.4, a refrigerant leakage test shall be conducted to either verify the cooling system is protected or, if unprotected, verify the performance of the refrigerant detection system. For tests methods SB5.1.5.2 and SB5.1.5.3, refrigerant sensors are to be placed in the refrigerated compartment where refrigerant is likely to concentrate.

SB5.1.5.2 For a Protected Cooling System, the test shall be conducted in accordance with SB5.1.2.

SB5.1.5.3 For an Unprotected Cooling System, the test shall be conducted in accordance with SB5.1.3, except the detection circuit shall operate to deenergize the outlet before the measured refrigeration concentration reaches the levels specified in SB5.1.3.8.

RATIONALE FOR DECISION:

It is common for laboratory refrigerators and freezers to employ a receptacle inside the refrigerated cavity for powering laboratory equipment, such as a shaker or stirrer. The unknown laboratory equipment may contain an ignition source, such as a switching device, which could present a hazard if flammable refrigerant is employed and it leaks into the refrigerated compartment. This CRD has been drafted to address these hazards.

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