

# MADISON AIR

## *Regulatory Update*

Publish date: 4/8/2025: Rev. 1

### Shipping HVAC Units Containing A2L Refrigerants in the U.S.

#### Executive Summary

There has been significant confusion in the HVAC industry around the rules governing the shipment of products containing new A2L refrigerants, such as R-454B and R-32. Since the new refrigerants are classified as slightly flammable, new rules apply.

The requirements, potential exemption from those requirements, and reasons for the exemption depend upon the weight of refrigerant contained in each unit. In all cases, the U.S. Department of Transportation (DOT) has provided ways to ship the units with a relaxation of the Hazardous Material Regulations for units up to 5,000 lbs.

For the United States, it basically breaks down to:

- **12 kg (25 lb) or less:** Exempt from all Hazardous Materials Regulations.
- **12 kg (25 lb) to 20 kg (44 lb):** Exempt from all Hazardous Materials Regulations if the shipper has obtained DOT Special Permit 21287.
- **5,000 lb or less:** Exempted from the requirements of 49 CFR 173.306(e)(1) and (2) if the shipper has DOT Special Permit 21379.

This article will expand on this information and cite the sources of these exemptions for the reader to review.

We believe in the **transformative power of air.**

# MADISON AIR

## *Regulatory Update*

### Introduction

Per 49 CFR 171, federal hazardous materials transportation law ([49 U.S.C. 5101](#) et seq.) directs the Secretary of Transportation to establish regulations for the safe and secure transportation of hazardous materials in commerce. The Pipeline and Hazardous Materials Safety Administrator issues the Hazardous Materials Regulations (HMR; [49 CFR parts 171 through 180](#)) under that delegated authority. A2L refrigerants, specifically Difluoromethane (R-32 or UN3252) is included in [§172.101 Hazardous Materials Table](#).

The requirements for shipping A2L refrigerant containing units varies based on the quantity of refrigerant in the unit and the corresponding exceptions that have been granted under [§173.307 Exceptions for compressed gases](#) and Special Permits granted by the U.S. Department of Transportation (DOT).



### 12 kg (25 lb) or less

Exempted from the requirements of Hazardous Materials Regulations.

49 CFR 173.307 (a)(4)(iii): Except when offered or transported by air, 12 kg (25 pounds) or less of a flammable, non-toxic gas;

Special requirements:

- Transportation by air or cargo vessel is not authorized.
- See [49 CFR 173.307](#) for additional details.

We believe in the **transformative power of air.**

# MADISON AIR

## *Regulatory Update*

### **12 kg (25 lb) to 20 kg (44 lb)**

Exempted from the requirements of Hazardous Materials Regulations if the shipper has DOT Special Permit 21287 (i.e. Daikin permit).

DOT-SP 21287 (2)(a): This special permit authorizes the transportation in commerce of refrigerating machines, including dehumidifiers and air conditioners, and components thereof, containing 20 kg (44 pounds) or less of GHS Category 1B or ASHRAE A2L gases in the same manner as A1 gases, per 49 CFR 173.307(a)(4)(iv).

49 CFR 173.307(a)(4)(iv): Except when offered or transported by air or vessel, 20 kg (44 pounds) or less of a Group A1 refrigerant specified in ANSI/ASHRAE Standard 15.

Special requirements:

- Transportation by air or cargo vessel is not authorized. [SP 21287(7)(b)].
- The unit may be reoffered for transportation by a person that is not a holder of SP 21287 provided no modification or change is made to the package or its contents. [SP 21287(8)(a)].
- A current copy of the special permit 21287 must be maintained at each facility where the package is offered or reoffered for transportation. [SP 21287(8)(b)].
- A current copy of the special permit 21287 must be carried onboard each motor vehicle used to transport packages covered by this special permit. [SP 21287(10)].
- Canada allows use of SP 21287 to ship compliant A2L containing units to the first drop off point in Canada. Any further shipment must comply with Transport Canada regulations.
- See [Special Permit 21287](#) for additional details.

### **5,000 lb or less**

Exempted from the requirements of 49 CFR 173.306(e)(1) and (2) if the shipper has DOT Special Permit 21379 (i.e. Trane permit)

We believe in the **transformative power of air.**

# MADISON AIR

## *Regulatory Update*

DOT-SP 21379 4: REGULATIONS FROM WHICH EXEMPTED: 49 CFR 173.306(e)(1) and (2), in that the weight requirement for non-Group A1 or non-Group 1 are exceeded as specified herein.

Special requirements:

- This special permit applies to new and reconditioned refrigerating machines that contain 5,000 pounds or less of GHS Category 1B or ASHRAE A2L refrigerant in a single machine or two or more units that contain an aggregate of 2,000 pounds or less. [SP 21379(7)]
- The unit may be reoffered for transportation by a person that is not a holder of SP 21379 provided no modification or change is made to the package or its contents. [SP 21379(8)(a)]
- A current copy of the special permit 21379 must be maintained at each facility where the package is offered or reoffered for transportation. [SP 21379 (8)(b)]
- Motor and rail freight are the only modes of transportation authorized. Rail freight is restricted to new (unused) refrigerating machines or components. [SP 21379 (9)]
- A current copy of the special permit 21379 must be carried onboard each motor vehicle used to transport packages covered by this special permit. [SP 21379(10)]
- Canada allows use of SP 21379 to ship compliant A2L containing units to the first drop off point in Canada. Any further shipment must comply with Transport Canada regulations.
- See [Special Permit 21379](#) for additional details.



We believe in the **transformative power of air.**

# MADISON AIR

## *Regulatory Update*



Another source of information is the DOT's [Hazardous Materials Information Center](#). They will provide one-on-one assistance by calling them at 1-800-467-4922.

### Summary

This regulatory update provides the framework for understanding the rules around shipping HVAC units containing A2L refrigerants in the United States and up to one stop into Canada. It includes links to the permits and the source of the exemptions granted by DOT.

For those interested in Canadian shipping regulations, please reach out to Transport Canada or [HRAI](#) for advice on shipping units with A2L refrigerants.

We encourage any Madison Air company or customer to reach out to the Madison Air regulatory team with any questions or concerns.

*Disclaimer: The information provided in this article does not, and is not intended to, constitute legal advice; instead, all information, content, and materials available in this article are for general informational purposes only. Information in this article may not constitute the most up-to-date legal or other information. If this article contains links to other third-party websites, the links are only for the convenience of the reader and does not constitute endorsement by Madison Air. Readers of this article should contact their regulatory division to obtain advice with respect to any matter discussed in this article.*

We believe in the **transformative power of air.**