



U.S. Department  
of Transportation  
Pipeline and  
Hazardous Materials  
Safety Administration

# DOT CHART 16

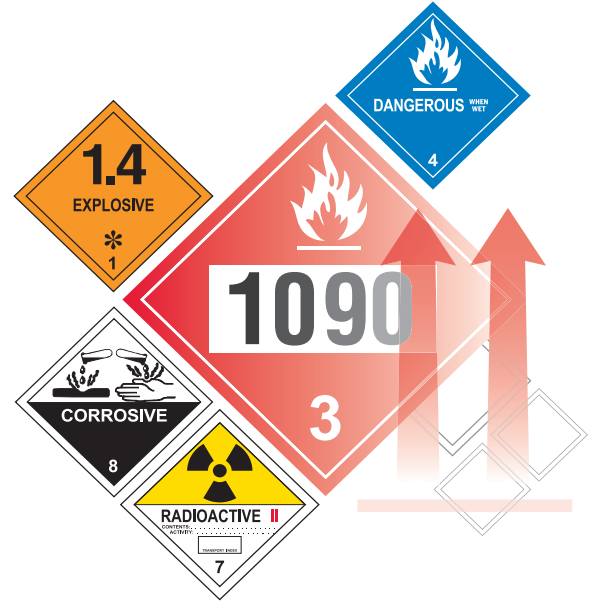
## Hazardous Materials Markings, Labeling and Placarding Guide

Refer to 49 CFR, Part 172:

Marking - Subpart D

Labeling - Subpart E

Placarding - Subpart F



**NOTE:** This document is for general guidance only and should not be used to determine compliance with 49 CFR, Parts 100-185.

### HAZARDOUS MATERIALS MARKINGS

Package Orientation  
(Red or Black)



§172.312(a)

Keep Away from Heat



§172.317



§173.25(a)(4)

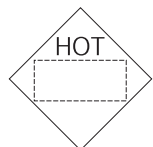
Fumigant Marking  
(Red or Black)



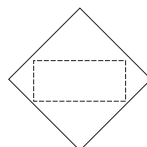
§172.302(g) and §173.9



§172.313(a)



§172.325



§172.332(a)

Biological Substances,  
Category B



§173.199 (a)(5)

NEW Lithium battery handling marking,  
Transition December 31, 2018



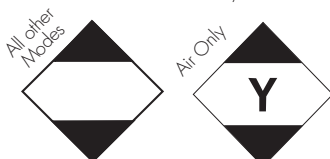
§173.185

Marine Pollutant



§172.322

Limited Quantity



§172.315

ORM-D, Transition  
December 31, 2020



§172.316

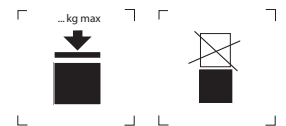


Excepted Quantity



§173.4a(g)

Marking of IBCs



§178.703(b)(7)(i)

# Hazardous Materials Warning Labels

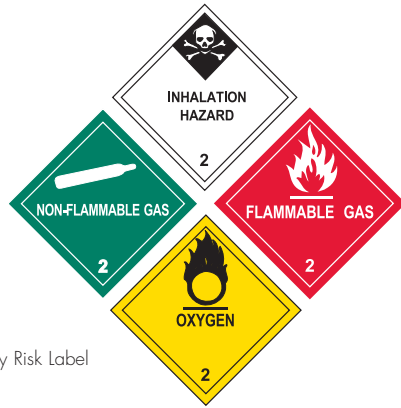
Actual label size: at least 100 mm (3.9 inches) on all sides

**CLASS 1 Explosives:**  
Divisions 1.1, 1.2, 1.3, 1.4, 1.5, 1.6



§172.411

**CLASS 2 Gases:**  
Divisions 2.1, 2.2, 2.3



§172.405(b), §172.415, §172.416, §172.417

**CLASS 3 Flammable Liquid**



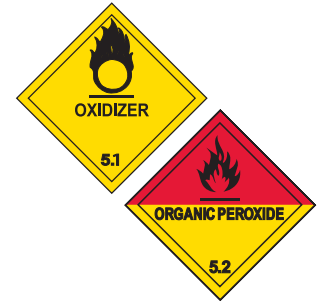
§172.419

**CLASS 4 Flammable Solid, Spontaneously Combustible, and Dangerous When Wet:**  
Divisions 4.1, 4.2, 4.3



§172.420, §172.422, §172.423

**CLASS 5 Oxidizer, Organic Peroxide:**  
Divisions 5.1 and 5.2



§172.426, §172.427

\* Include compatibility group letter.

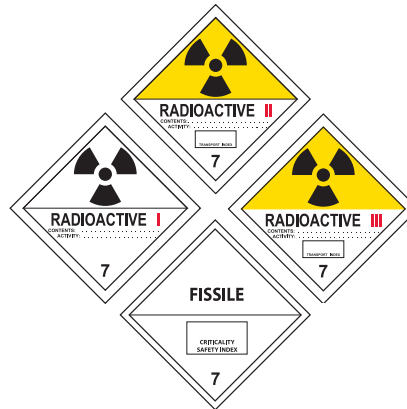
\*\* Include division number and compatibility group letter.

**CLASS 6 Poison (Toxic), Poison Inhalation Hazard, Infectious Substance:**  
Divisions 6.1 and 6.2



§172.323, §172.405(c), §172.429, §172.430, §172.432

**CLASS 7 Radioactive**



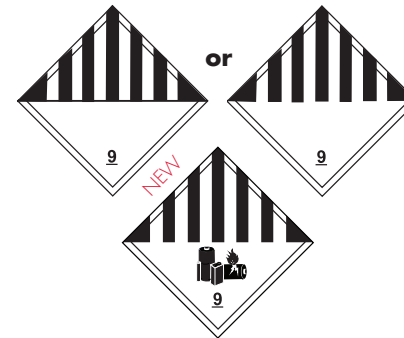
§172.436, §172.438, §172.440, §172.441

**CLASS 8 Corrosive**



§172.442

**CLASS 9 Miscellaneous Hazardous Material**



§§172.446, §172.447

**Cargo Aircraft Only**



§172.448

**Empty Label**

**EMPTY**

§172.450

For Regulated Medical Waste (RMW), an Infectious Substance label is not required on an outer packaging if the OSHA Biohazard marking is used as prescribed in 29 CFR 1910.1030(g). A bulk package of RMW must display a BIOHAZARD marking.

Effective January 2019, the NEW Class 9 lithium battery handling label must be used for lithium battery shipments.

# Hazardous Materials Warning Placards

Actual placard size: at least 250 mm (9.84 inches) on all sides

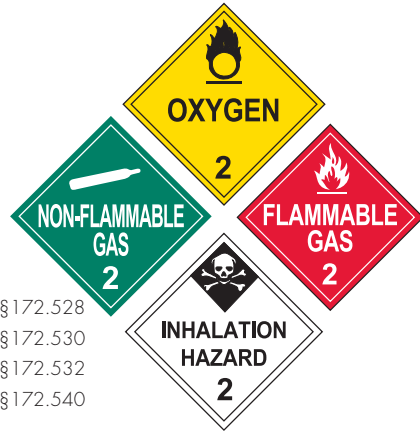
## CLASS 1 Explosives



§172.522  
§172.523  
§172.524  
§172.525

\* For Divisions 1.1, 1.2, or 1.3, enter division number and compatibility group letter, when required; placard any quantity. For Divisions 1.4, 1.5, and 1.6, enter compatibility group letter, when required; placard 454 kg (1,001 lbs) or more.

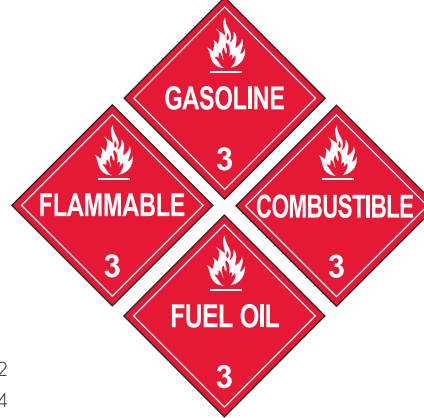
## CLASS 2 Gases



§172.528  
§172.530  
§172.532  
§172.540

For NON-FLAMMABLE GAS, OXYGEN (compressed gas or refrigerated liquid), and FLAMMABLE GAS, placard 454 kg (1,001 lbs) or more gross weight. For POISON GAS (Division 2.3), placard any quantity.

## CLASS 3 Flammable Liquid and Combustible Liquid



§172.542  
§172.544

For FLAMMABLE placard 454 kg (1,001 lbs) or more. GASOLINE may be used in place of FLAMMABLE placard displayed on a cargo tank or portable tank transporting gasoline by highway. Placard combustible liquid transported in bulk. See §172.504(f)(2) for use of FLAMMABLE placard in place of COMBUSTIBLE. FUEL OIL may be used in place of COMBUSTIBLE on a cargo or portable tank transporting fuel oil not classed as a flammable liquid by highway.

## CLASS 4 Flammable Solid, Spontaneously Combustible, and Dangerous When Wet



§172.546, §172.547, §172.548

For FLAMMABLE SOLID and SPONTANEOUSLY COMBUSTIBLE, placard 454 kg (1,001 lbs) or more. For DANGEROUS WHEN WET (Division 4.3), placard any quantity.

## CLASS 5 Oxidizer & Organic Peroxide



§172.550, §172.552

For OXIDIZER and ORGANIC PEROXIDE (other than TYPE B, temperature controlled), placard 454 kg (1,001 lbs) or more. For ORGANIC PEROXIDE (Division 5.2), Type B, temperature controlled, placard any quantity.

## CLASS 6 Poison (Toxic) and Poison Inhalation Hazard



§172.504(f)(10), §172.554, §172.555

For POISON (PGI or PGII, other than inhalation hazard) and POISON (PGIII), placard 454 kg (1,001 lbs) or more. For POISON-INHALATION HAZARD (Division 6.1), inhalation hazard only, placard any quantity.

## CLASS 7 Radioactive



§172.556

Placard any quantity - packages bearing RADIOACTIVE YELLOW-III labels only. Certain low specific activity radioactive materials in "exclusive use" will not bear the label, but the radioactive placard is required for exclusive use shipments of low specific activity material and surface contaminated objects transported in accordance with §172.504(e) Table 1 and §173.427(a)(6).

## CLASS 8 Corrosive



§172.558

For CORROSIVE, placard 454 kg (1,001 lbs) or more.

## CLASS 9 Miscellaneous



§172.560

Not required for domestic transportation. A bulk packaging containing a Class 9 material must be marked with the appropriate ID number displayed on a Class 9 placard, an orange panel, or a white square-on-point display.

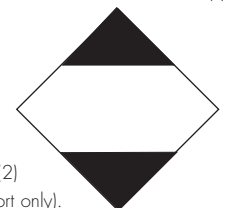
## Dangerous



§172.521

A freight container, unit load device, transport vehicle, or rail car which contains non-bulk packages with two or more categories of hazardous materials that require different placards specified in Table 2 §172.504(e) may be placarded with DANGEROUS placards instead of the specific placards required for each of the materials in Table 2. However, when 1,000 kg (2,205 lbs) or more of one category of material is loaded at one loading facility, the placard specified in Table 2 must be applied.

Limited Quantity Marking



§172.315(a)(2)  
(Vessel transport only).

Safety begins with communication!

# General Guidelines on Use of Warning Labels and Placards

## LABELS

See 49 CFR, Part 172, Subpart E, for complete labeling regulations.

- The Hazardous Materials Table [§ 172.101, Col. 6] identifies the proper label(s) for the hazardous material listed.
- Any person who offers a hazardous material for transportation MUST label the package, if required [§ 172.400(a)].
- Labels may be affixed to packages when not required by regulations, provided each label represents a hazard of the material contained in the package [§ 172.401].
- For labeling mixed or consolidated packages, see § 172.404.
- The appropriate hazard class or division number must be displayed in the lower corner of a primary and subsidiary hazard label [§ 172.402(b)].
- For classes 1, 2, 3, 4, 5, 6, and 8, text indicating a hazard (e.g., "CORROSIVE") is NOT required on a primary or subsidiary label. The label must otherwise conform to Subpart E of Part 172 [§ 172.405].
- Labels must be printed on or affixed to the surface of the package near the proper shipping name marking [§ 172.406(a)].
- When primary and subsidiary labels are required, they must be displayed next to each other [§ 172.406(c)].
- For a package containing a Division 6.1, PG III material, the POISON label specified in § 172.430 may be modified to display the text PG III instead of POISON or TOXIC. Also see § 172.405(c).
- The ORGANIC PEROXIDE label [§ 172.427] indicates that organic peroxides are highly flammable. Use of the ORGANIC PEROXIDE label eliminates the need for a flammable liquid subsidiary label. The color of the border must be black and the color of the flame may be black or white.

## PLACARDS

See 49 CFR, Part 172, Subpart F, for complete placarding regulations.

- Each person who offers for transportation or transports any hazardous material subject to the Hazardous Materials Regulations must comply with all applicable requirements of Subpart F [§ 172.500].
- Placards may be displayed for a hazardous material, even when not required, if the placarding otherwise conforms to the requirements of Subpart F of Part 172 [§ 172.502(c)].
- For other than Class 7 or the DANGEROUS placard, text indicating a hazard (e.g., "FLAMMABLE") is not required. Text may be omitted from the OXYGEN placard only if the specific ID number is displayed on the placard [§ 172.519(b)(3)].
- For a placard corresponding to the primary or subsidiary hazard class of a material, the hazard class or division number must be displayed in the lower corner of the placard [§ 172.519(b)(4)].
- Except as otherwise provided, any bulk packaging, freight container, unit load device, transport vehicle or rail car containing any quantity of material listed in Table 1 must be placarded [§ 172.504].
- When the aggregate gross weight of all hazardous materials in non-bulk packages covered in Table 2 is less than 454 kg (1,001 lbs), no placard is required on a transport vehicle or freight container when transported by highway or rail [§ 172.504(c)].
- Notes: See § 172.504(f)(10) for placarding Division 6.1, PG III materials.
- Placarded loads require registration with USDOT. See § 107.601 for registration regulations.

## PLACARDING TABLES

[§ 172.504(e)]

TABLE 1

Category of material (Hazard Class or division number and additional description, as appropriate)	Placard name
1.1.....	EXPLOSIVES 1.1.....
1.2.....	EXPLOSIVES 1.2.....
1.3.....	EXPLOSIVES 1.3.....
2.3.....	POISON GAS.....
4.3.....	DANGEROUS WHEN WET.....
5.2 (Organic peroxide, Type B, liquid or solid, temperature controlled).....	ORGANIC PEROXIDE.....
6.1 (Materials poisonous by inhalation (see § 171.8)).....	POISON INHALATION HAZARD.....
7 (Radioactive Yellow III label only).....	RADIOACTIVE <sup>1</sup> .....

<sup>1</sup>RADIOACTIVE placard also required for exclusive use shipments of low specific activity material and surface contaminated objects transported in accordance with § 173.427(b)(4) and (5) or (c) of the subchapter.

TABLE 2

Category of material (Hazard Class or division number and additional description, as appropriate)	Placard name
1.4.....	EXPLOSIVES 1.4.....
1.5.....	EXPLOSIVES 1.5.....
1.6.....	EXPLOSIVES 1.6.....
2.1.....	FLAMMABLE GAS.....
2.2.....	NON-FLAMMABLE GAS.....
3.....	FLAMMABLE.....
Combustible Liquid.....	COMBUSTIBLE.....
4.1.....	FLAMMABLE SOLID.....
4.2.....	SPONTANEOUSLY COMBUSTIBLE.....
5.1.....	OXIDIZER.....
5.2 (Other than organic peroxide, Type B, liquid or solid, temperature controlled).....	ORGANIC PEROXIDE.....
6.1 (Other than materials poisonous by inhalation).....	POISON.....
6.2.....	(None).....
8.....	CORROSIVE.....
9.....	Class 9 (See § 172.504(f)(9)).....
ORM-D.....	(None).....

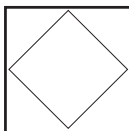
## IDENTIFICATION NUMBER DISPLAYS



§ 172.332

Appropriate placard must be used with orange panel.

IDENTIFICATION NUMBER MARKINGS ON ORANGE PANELS OR APPROPRIATE PLACARDS MUST BE DISPLAYED ON: (1) Tank Cars, Cargo Tanks, Portable Tanks, and other Bulk Packagings; (2) Transport vehicles or freight containers containing 4,000 kg (8,820 lbs) in non-bulk packages of only a single hazardous material having the same proper shipping name and identification number loaded at one facility and transport vehicle contains no other material, hazardous or otherwise; and (3) transport vehicles or freight containers containing 1,000 kg (2,205 lbs) of non-bulk packages of materials poisonous by inhalation in Hazard Zone A or B. See § 172.301(a)(3), 172.313(c), 172.326, 172.328, 172.330, and 172.331.



§ 172.527

Square white background required for placard for highway route controlled quantity radioactive material and for rail shipment of certain explosives and poisons, and for flammable gas in a DOT 113 tank car [§ 172.507 and § 172.510].

**For additional information contact:**  
**The Hazardous Materials Info Center**  
**1-800-HMR-4922**  
 (1-800-467-4922)  
 Email: [infocntr@dot.gov](mailto:infocntr@dot.gov)  
<http://hazmat.dot.gov>

This Chart is available online at the following link: <http://phmsa.dot.gov/hazmat>.



**U.S. Department of Transportation**  
**Pipeline and Hazardous Materials Administration**



**CHART 16 Now Available AS FREE MOBILE APP**



PHH50-0160-0817