

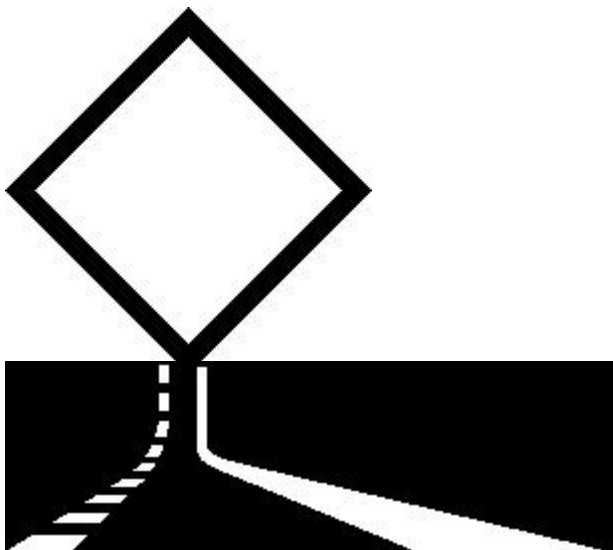
# DG

**A Technical Publication  
from the Co-ordination  
and Information Centre**

## **Transportation of Welding Gases**

November 2009

**Dangerous Goods  
And Rail Safety**



**Government  
of Alberta** ■  
Transportation

This material is meant as a guide to certain parts of the Transportation of Dangerous Goods Regulations and is not meant to be a substitute for them. It is the responsibility of handlers, offerers and transporters of dangerous goods to consult the Regulations for the exact requirements. The Coordination and Information Centre of Alberta Transportation can provide accurate information regarding the Regulations 24 hours a day.

**Co-ordination and Information Centre**

**Alberta Transportation  
Dangerous Goods and Rail Safety Branch  
Main Floor, Twin Atria Building  
4999 – 98 Avenue  
Edmonton, Alberta, T6B 2X3**

**Tel. Edmonton: (780) 422 – 9600  
Tel. Province-wide: 1 (800) 272 – 9600  
Fax: (780) 427 – 1044**

**These telephone lines are recorded to assist in responding to the emergency (natural/manmade) and/or inquiry regarding dangerous goods and to ensure that the information is accurate. Direct any questions regarding the recording to the Compliance Officer responding to your call or contact the Manager of the CIC at 780-427-8660. *Legal Authority: Dangerous Goods Transportation and Handling Act, Section 13(1).***

## **WELDING GASES EXEMPTION**

**(Section 1.32.3 of Transportation of Dangerous Goods Regulations)**

Several gases used for welding and related purposes are exempt from documentation and dangerous goods training requirements of the Transportation of Dangerous Goods (TDG) Regulations when being transported by road. Provided the requirements listed below are followed to the letter, the operator does not require a dangerous goods shipping document or a dangerous goods training certificate if:

- the dangerous goods are contained in **not more than five small means of containment (cylinders)**;
- the gross mass of the dangerous goods is less than or equal to **500 kg gross mass**; and
- the **labels for the gases carried can be seen from outside** the road vehicle.

This exemption applies only to:

- UN 1001, ACETYLENE, DISSOLVED;
- UN 1002, AIR, COMPRESSED;
- UN 1006, ARGON, COMPRESSED;
- UN1013, CARBON DIOXIDE;
- UN 1060, METHYLACETYLENE AND PROPADIENE MIXTURE, STABILIZED;
- UN1066, NITROGEN, COMPRESSED;
- UN 1072, OXYGEN, COMPRESSED; or
- UN 1978, PROPANE.

More than 500 kg gross mass of dangerous goods in more than five small means of containment/cylinders of the above gases cannot use this exemption.

## **OTHER EXEMPTIONS**

Some welding and service trucks may carry cylinders of gases not included in **Section 1.32.3 of the TDG Regulations** (see Page 3 of this bulletin) but may meet the requirements for the following exemptions:

### **150 kg Gross Mass Exemption (Section 1.15)**

For gases (Class 2), this section provides an exemption from the documentation, dangerous good safety marks, training, and accidental release and imminent accidental release reporting requirements of the TDG Regulations. This exemption applies if the gross mass of the gases on board is less than or equal to 150 Kg and are contained in small means of containment in compliance with the requirements of Part 5, Means of Containment, of the TDG Regulations for transporting gases. In the case of Class 2.1, Flammable Gases, the cylinder must not exceed a capacity of 46 L.

Dangerous goods in quantities that require an Emergency Response Plan, Class 2.1 Flammable Gases in a cylinder that has a capacity greater than 46 L, and Class 2.3 Toxic Gases, are not included in the exemption.

### **500 kg Gross Mass Exemption (Section 1.16)**

This section provides a partial exemption from the documentation, dangerous goods safety marks and means of containment in standard requirements of the TDG Regulations; if the gross mass of the gases on board is less than or equal to 500 Kg and are carried in small means of containment. This exemption applies if the gross mass of the gases on board is less than or equal to 500 Kg and are contained in small means of containment in compliance with the requirements of Part 5, Means of Containment, of the TDG Regulations for transporting gases. In the case of Class 2.1, Flammable Gases, the cylinder must not exceed a capacity of 46 L. You must, however, comply with the TDG Regulations for training. The driver must have a valid dangerous goods training certificate issued by his employer.

A simplified shipping document must accompany the shipment and must contain the primary class of the dangerous goods and the total number of means of containment on which a dangerous goods safety mark is required to be displayed.

*For example:           Class 2.2, number of means of containment, 6*

*Class 2.1, number of means of containment, 3*

Dangerous goods in quantities that require an Emergency Response Plan, Class 2.1 Flammable Gases in a cylinder that has a capacity greater than 46 L and Class 2.3 Toxic Gases are not included in the exemption.

## **SHIPPING DOCUMENT**

A shipping document is required for a dangerous goods shipment unless there is an exemption under the TDG Regulations. If documentation is needed the consignor must provide the person transporting the dangerous goods with a shipping document. The supplier must also ensure that small containers of dangerous goods have proper safety marks. When you pick up a shipment of dangerous goods, the responsibilities of classification, documentation and safety marks will be handled by the consignor.

### Shipping Document Requirements

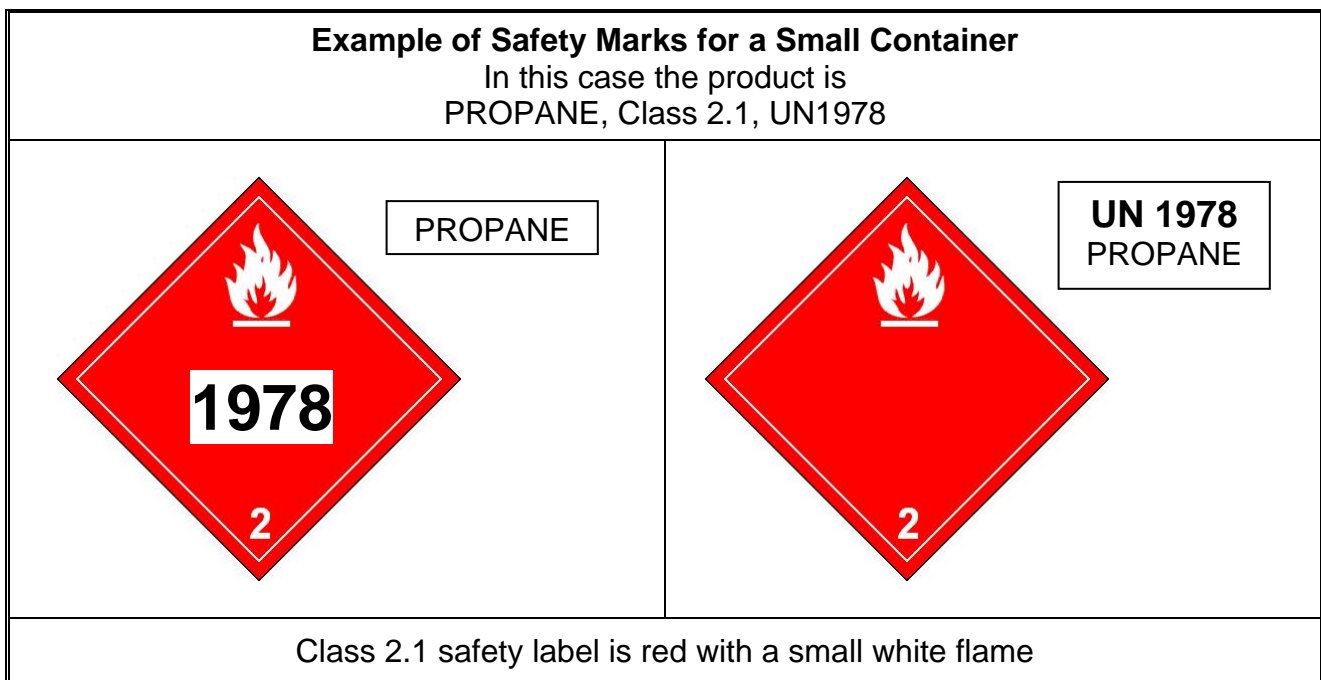
Shipping Document Information	When Required	Where in The Regulations
Date	Always	3.5(1)(b)
Name and address of consignor	Always	3.5(1)(a)
Description of goods in the following order		3.5(1)(c)
a. Shipping name	Always	3.5(1)(c)(i)
b. The technical name of the most dangerous substance related to the primary classification	If Provision 16 of Schedule 2 applies	3.5(1)(c)(i)(A)
c. The words "Not Odorized"	For liquefied petroleum gas that has not been odorized	3.5(1)(c)(i)(B)
d. Primary classification	Always	3.5(1)(c)(ii)
e. Subsidiary classifications	If Any	3.5(1)(c)(iv)
f. UN number	Always	3.5(1)(c)(v)
g. Packing group (none for compressed gases)	If Any	3.5(1)(c)(vi)
The quantity in the International System of Units (SI) <sup>1,2</sup>	Always	3.5(1)(d)
The number of containers <sup>2</sup>	For dangerous goods in small containers requiring safety labels	3.5(1)(e)
The words "24-Hour Number" followed by a telephone number where the consignor can be easily reached <sup>3</sup>	Always	3.5(1)(f)
Emergency Response Assistance Plan (ERAP) number and telephone number to activate it	If Required	3.6(1)

1. If the quantity of dangerous goods is less than 10% of the container's capacity then the words "Residue – Last Contained" and the shipping name of the dangerous goods last contained in the means of containment may be used to describe the quantity. This does not apply to Class 2 gases in small containers [Section 3.5(4)].
2. If the quantity of dangerous goods or the number of small means of containment changes during transport, the carrier must show on the shipping document or on a document attached to the shipping document the change in the quantity of dangerous goods or the number of small containers [Section 3.5(5)].
3. A consignor can also use the telephone number of an agency that is competent to give the technical information on the shipment. For example, CANUTEC can be used as a source of technical information provided that the consignor has received permission in writing from CANUTEC [Section 3.5(2)].

## SAFETY MARKS

### Small Means of Containment

Safety marks are the signs, labels and markings which are required by the TDG Regulations. The Regulations require that small means of containment (less than or equal to **450 l capacity**) display the appropriate label for that hazard class of dangerous good. A small container must display the dangerous goods labels for the primary and subsidiary hazard class(es), the shipping name and the UN number of the product [Sections 4.10 to 4.12]. The label is 100 mm on each side. If the container is too small or it has an irregular shape, the label can be reduced in size up to a dimension of 30 mm on each side [Section 4.7(2)].



### Special Requirement for Oxidizing Gases

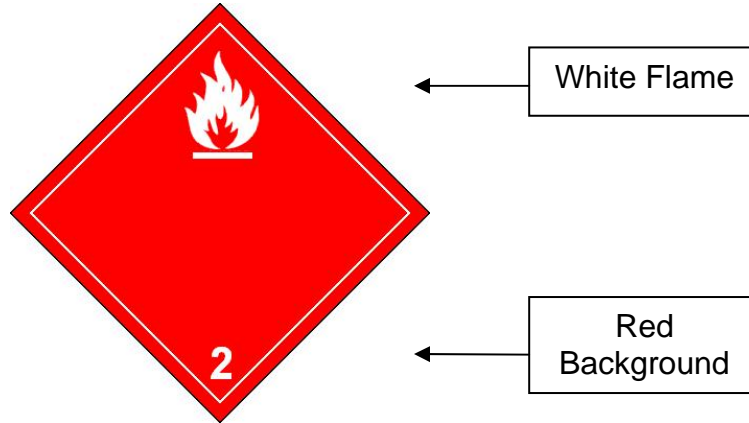
When dangerous goods are in Class 2, Gases, are oxidizing gases, the oxidizing gas label [Section 4.10(1)(b)] must be displayed. This applies only to the following dangerous goods:

- UN1072, OXYGEN, COMPRESSED;
- UN1073, OXYGEN, REFRIGERATED LIQUID;
- UN3156, COMPRESSED GAS, OXIDIZING, N.O.S.; and
- UN3157, LIQUEFIED GAS, OXIDIZING, N.O.S.

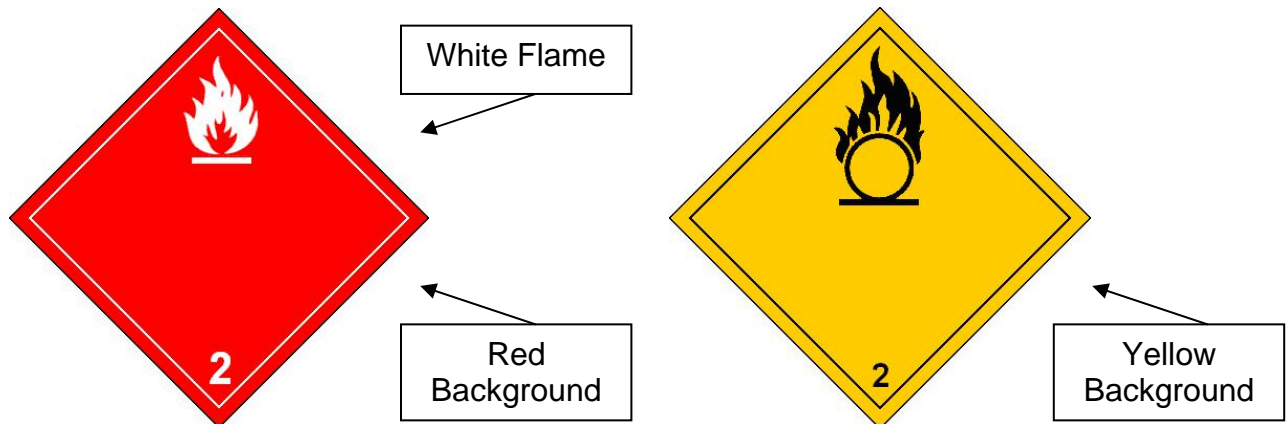
## EXAMPLES OF DG HAZARD LABELS FOR WELDING TRUCKS

The examples below show some of the labels that can be used for welding gases transported according to **Section 1.32.3** of the TDG Regulations.

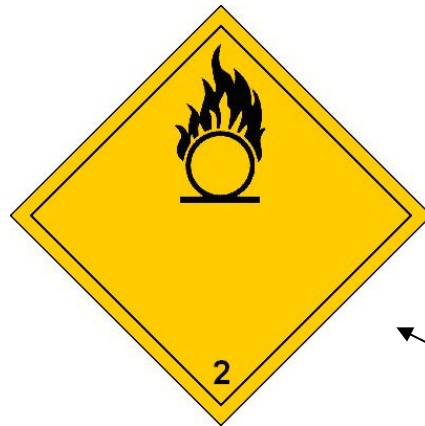
**Acetylene** alone, **Propane** alone, **Acetylene** and **Propane** together, require one Class 2.1 flammable (red) label.



**Acetylene** and **Oxygen** together, requires one Class 2.1 flammable (red) label and one oxidizing gas (yellow) label.

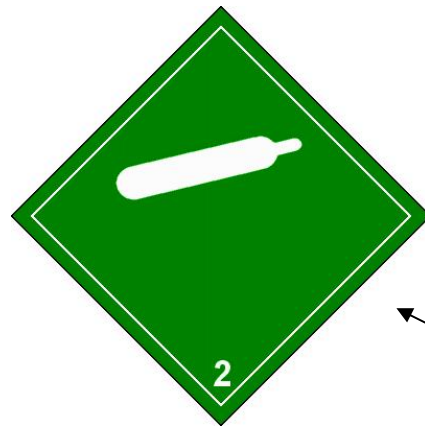


**Oxygen** alone, requires one oxidizing gas label.



Yellow  
Background

**Compressed air** alone, requires one class 2.2 non-flammable, non-toxic gas label.



Green  
Background

## CYLINDER LOADING AND SECURING

All compressed gas cylinders are considered dangerous because they contain gas under pressure. The cylinder's valve can easily be damaged by falling or striking another object; something that could create a rocket out of an ordinary cylinder. The TDG Regulations [Section 5.4] say only that the cylinders/containers shall be loaded safely and securely stowed during transport. There is no direction as to how it should be done. In addition, CSA Standard B340 [referred to in Section 5.10(1)(a)(i)] requires that any gas with a liquid phase (for example, propane which is liquefied, or acetylene, which is dissolved in acetone), must be transported upright so that the safety valves are in contact with the vapour space and not the liquid.

## TRAINING

Unless there is an exemption under the TDG Regulations, anyone who handles, offers for transport or transports dangerous goods must have a valid Dangerous Goods Training Certificate or must be under the direct supervision of a trained person [Section 6.1].

The employer issues a training certificate when he/she has reasonable grounds to believe that an employee possesses adequate training. Self-employed people can issue training certificates for themselves. The employer must keep a record of the training that the employee has received and a copy of his/her training certificate [Section 6.6]. The training certificate must be immediately presented to an inspector who requests for it [Section 6.8].

## ACCIDENTAL RELEASES OF DANGEROUS GOODS

In case of an accidental release or imminent accidental release of dangerous goods, the person who has possession of the dangerous goods must report immediately. In the case of gaseous dangerous goods an immediate report is required when the release involves **any quantity that could pose a danger to public safety or any sustained release of 10 minutes or more or if there is an imminent accidental release of dangerous goods** [Table to Section 8.1]. For more information on reporting requirements, refer to the CIC information bulletin entitled [Reporting an Accidental Release of Dangerous Goods](#).

In Alberta, the report must be made to:

- the local police,
- Alberta Transportation, Dangerous Goods and Rail Safety Branch at 1-800-272-9600,
- the person's employer,
- the consignor of the dangerous goods,
- the owner, lessee or charterer of the road vehicle involved, and
- CANUTEC at (613)996-6666 when the dangerous goods are in Class 1 Explosives, Class 6.2 Infectious Substances, or there is an accidental release from a cylinder that suffered a catastrophic failure.

The information that must be included in the report is:

- the shipping name or UN number of the dangerous goods,
- the quantity of dangerous goods initially loaded into the container,
- the quantity of dangerous goods released,
- a description of the condition of the container and the details of the conditions of transport when the release occurred
- a description of the circumstances that led to a catastrophic failure of a cylinder, if involved in the release,
- the location of the accidental release,
- the number of injuries or deaths, if any occurred,
- an estimate of the number of people evacuated as a result of the accidental release.

A report can also include other information not required by the regulations; for example, any cleanup arrangements, involvement of other emergency response agencies like the police, fire department, Alberta Environment, etc.

After submitting an immediate report, the employer of the person who made the immediate report must submit a 30-day Follow-up Report to the Dangerous Goods Directorate of Transport Canada [Section 8.3]. The 30-Day Report must have the following information:

- name, address and telephone number of the place of business of the person submitting the report,
- date, time and location of the accidental release,
- name and address of the place of business of the consignor,
- classification of the dangerous goods,
- estimate of the quantity loaded into the containers before the accidental release and the quantity of dangerous goods released,
- a description of the means of containment involved and a description of the failure or damage including how the release occurred,
- if a catastrophic failure of a cylinder occurred, the cylinder certification markings and a description of the failure,
- number of deaths and injuries resulting from the accidental release,
- an estimate of the number of people evacuated, if any, and
- if an ERAP was activated, the name of the person who responded.

**DANGEROUS GOODS SHIPPING DOCUMENT FOR ROAD TRANSPORT**

<b>DESTINATION (City-Town)</b>  Name:  Address:			<b>CONSIGNOR</b>  Name:  Address:			
Name of Carrier	Prepaid <input type="checkbox"/>	Collect <input type="checkbox"/>	Transport Unit Number			
Point of Origin			Shipping Date	Shipper's No.		
REGULATED DANGEROUS GOODS			24-Hour Number:			
			ERAP Reference _____ and Telephone Number _____			
Shipping Name	Primary Class	Subsidiary Class	UN Number	Packing Group	Quantity	Packages Requiring Labels
This is to certify that the above named articles are properly classified, described, packaged, marked and labelled and are in proper condition for transportation according to the <i>Transportation of Dangerous Goods Regulations</i> .						
<b>Special Instructions</b>						
<b>NON-REGULATED GOODS</b>						
Packages	Description of Articles			Weight		
Received in apparent good order				_____ <b>Consignee Signature</b>		_____ <b>Shipper's Signature</b>
Received in Apparent Good Order	_____ <b>Driver's Signature</b>			_____ <b>Driver's No.</b>		

Please note that this sample shipping document contains some information that is not required in the TDG Regulations. The additional information reflects current industry practices.