Propane Signage

- DANGER
  - NO SMOKING
  - MATCHES OR OPEN LIGHTS

- CAUTION
  - THIS VEHICLE MAKES FULL STOPS AT ALL RAILROAD CROSSINGS

- EMERGENCY SHUTOFF VALVE
  - PULL TO CLOSE

- LIQUID PETROLEUM GAS
- PROPANE
- LIQUID
- VAPOR

- FLAMMABLE

- LIQUID

- NO SMOKING

- LP-GAS EQUIPMENT INC.
  - DISTRIBUTORS SINCE 1957

- 881 HERSEY STREET
  - ST. PAUL, MN  55114

- PHONE  (651) 646-1177
- FAX  (651) 646-1676
Introduction

An important aspect in the safe storage and handling of Liquefied Petroleum Gas is the requirement to post notices that identify the unique hazards inherent in the product. Propane, for example, is attractive as a fuel because it is flammable when released from its container and mixed with air. This same flammable property that makes the fuel useable also requires us to address certain hazards associated with the product. The posting of a No Smoking sign is an obvious and practical example.

Safety is always the first and foremost consideration in propane systems. We cannot possibly engineer or design all the risks out of a propane system. Making propane nonflammable for instance would make it unusable. Thus, safety requires that we alert potential users whether experienced or uninitiated to the risks involved in its use by labeling our systems with safety signs.

Signs and More Signs

The proper posting of warnings for the propane industry is confusing at best. The number of signs and decals used is seemingly endless. This is largely due to the versatile nature of propane. What does a forklift, a home furnace, a blast furnace, a crop dryer, an RV, a refinery scrubber, a hospital, a restaurant and a truck engine have in common? They can all be fueled with propane. Many uses, all with the same fuel. Obviously the safety labeling for the home furnace would be quite different than the refinery scrubber or the hospital or the forklift refueller. Add to this the special DOT labeling requirements for truck, rail and container transportation on public ways and we have a near nightmare of variations to keep track of.

Codes and More Codes

As can be seen from the above, the requirements for warning signs are specific to the location and use of the system. What is not so evident in this is that there is no single document or code manual that covers all the warning requirements for the myriad of possible systems. The "bible" for Liquefied Petroleum Gas, NFPA 58, for instance, addresses nicely the required markings for DOT cylinders in section 5.2.8 with reference to 49 CFR "Transportation". This code however is silent on the No Smoking or product identification requirements for ASME containers installed at various locations.

For any specific propane system, the marking requirements are quite often beyond the scope of a single code book. This makes the marking requirements difficult to find. To alleviate this confusion, this document is a compilation of most of the marking requirements used in the propane industry. Keeping in mind that the marking requirements are system specific, this guide is organized by category of storage or usage with reference to the appropriate code or manual.

Be aware that any guideline, this one included, is just a guide and not an official code. The codes referenced here are model codes that must be adopted by the state, county or local jurisdiction. In all cases, the final approval for any system is determined by the Authority Having Jurisdiction (AHJ). The AHJ is commonly a local official having statutory authority whose role is public safety. The local building inspector, the fire chief, the fire marshall or a labor department official are examples of AHJ.

Referenced Materials


Bulk Storage General Requirements

This section of the Guideline applies to industrial, commercial and institutional facilities that store, process or use propane. It also applies to any facilities whose operations entail product transfer.

It does not apply to systems in general public use where storage containers of less than 1200 gallons or 4000 gallons aggregate are installed such as single family residential heating systems.

The suggested signage is listed in double quotes following the code requirement.

**Bulk Storage General Signage Requirements**

1.) Storage Container must have a dataplate.  
   (Provided by tank manufacturer during tank fabrication)  
   Code Reference:  
   **NFPA 58:** 5.2.8.3

2.) Storage Container must be marked describing the contents  
   (Propane or Liquefied Petroleum Gas) and a statement of the hazard (Flammable).  
   "155-71D" "155-714D" "155-716D" "V-302BB" "V-24BB"  
   Code Reference:  
   **NFPA 1:** 60.1.13  
   **IFC:** 2703.5

3.) Storage Container must be marked with hazmat ID.  
   (Certain entrances to storage or dispensing areas may also require hazmat ID marking)  
   "HZ-704-1" "HZ-704-3"  
   Code Reference:  
   **NFPA 704:** 1.3  
   **IFC:** 2703.5

4.) No Smoking signs must be posted in areas or sites where flammable gases are used or stored.  
   No smoking or open flames within 25 ft. of point of transfer.  
   "916D" "916D-3" "157" "157D" "201"  
   Code Reference:  
   **NFPA 58:** 7.2.3.2(B)

5.) Public access to storage and transfer areas prohibited.  
   "1317V" "949" "949D"  
   Code Reference:  
   **NFPA 58:** 7.2.3.1

6.) The maximum permitted percentage (%) of tank capacity must be marked either on the dataplate or adjacent to the fixed maximum liquid level gauge.  
   Code Reference:  
   **NFPA 58:** 5.7.5.4

7.) The liquid and vapor connections on ASME containers more than 2000 gal water capacity must be labelled designating whether they communicate with the vapor or liquid space.  
   "V-90-5" or "V-91-5"  
   Code Reference:  
   **NFPA 58:** 5.7.8.5

8.) *Internal Valves* installed in liquid service require a remote shutdown station which must be marked in letters at least 2" in height incorporating these words:  
    Propane - Container Liquid Valve Emergency Shutoff  
    "P-135" "P-148" "P-149"  
    Code Reference:  
    **NFPA 58:** 6.11.5  
    **IFC:** 2703.2.2.1

9.) *Emergency Shutoff Valves* require a remote shutoff device which must be clearly marked.  
    "P-81" "P-82"  
    Code Reference:  
    **NFPA 58:** 6.12.10(1)  
    **IFC:** 2703.2.2.1

10.) During railcar unloading, a stop tank car connected sign must be placed at the active end of the track siding.  
    "945B"  
    Code Reference:  
    **NFPA 58:** 7.2.3.6
Cylinder Systems General Requirements

This section of the Guideline applies to DOT cylinders. The marking requirements for cylinders are considerably different than that of the ASME storage tanks in part because they are designed in accordance with DOT specifications for mobile service over the public highways. Some of the markings are required even if the cylinder is used in a permanent non-mobile system.

The suggested signage is listed in double quotes following the code requirement.

**Cylinder Systems Signage Requirements**

1.) Cylinders must be marked with the water capacity and the tare weight in pounds.  
(Provided by tank manufacturer during tank fabrication)  
   
2.) Cylinders must be marked in accordance with DOT regulations.  
(Specifics cited in the following paragraphs)  
   
3.) During transport, cylinders must be marked with the proper Shipping Name (Propane or Liquefied Petroleum Gas), the ID number assigned to the Shipping Name (1075) and the statement of hazard (Flammable or Flammable Gas).  
   
   The use of the CGA marking system may be used and fulfills the above marking requirements.  
   "S DOT" or "CYL 2 in 1" or "CYL 3 in 1" or "V-24BB"  
   
4.) When cylinders are stored with other gases, the requirements listed in number 3 above also apply.  
   
5.) Cylinders of 100 lb. LP-Gas capacity or less, not filled on site, must be marked with warning labels describing the potential hazards of LP-Gas.  
   "SP-53R" or "CYL 2 in 1" or "CYL 3 in 1"  
   
6.) Cylinders must be marked in accordance with NFPA 704 when used in industrial or commercial applications.  
   "HZ-116" or "CYL 3 in 1"  
   
7.) Cylinders must be marked with the date of manufacture and/or the date of requalification with the prescribed RIN and letter "E".  
   "5-C86", "V-88-1", V-88-2", "V-88-3", "V-88-4"  
   
8.) Certain pre- October 1, 1998 horizontal cylinders cannot be refitted with OPD valves. These cylinders are exempt from the OPD requirement but must be labeled "No OPD".  
   "V-128"  

**Code Reference**

- **NFPA 58**:5.2.8.2
- **NFPA 58**:5.2.1.1
- **CFR 49**:172.101
- **CFR 49**:172.102
- **CFR 49**:172.301
- **CFR 49**:172.400a
- **CGA C-7**: Appendix A
- **IFC**:3003.2
- **NFPA 58**:6.4.5.11
- **NFPA 58**:5.2.8.4
- **NFPA 704**:1.3
- **NFPA 1**:60.1.13
- **NFPA 58**:5.2.3.3
- **CFR 49**:180.213
- **NFPA 58**:5.7.3.5
Cargo Tank General Requirements

This section of the Guideline applies to Cargo Tanks. Cargo Tanks are defined in CFR 49:171.8 as tanks intended for the carriage of liquids or gases, which are permanently attached to a motor vehicle or because of their size and attachment are loaded and unloaded without being removed from the motor vehicle. The common terms for these vehicles are bobtails and transports.

The suggested signage is listed in double quotes following the code requirement.

<table>
<thead>
<tr>
<th>Cargo Tank Signage Requirements</th>
<th>Code Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.) Cargo tanks must be marked with the proper shipping name</td>
<td><strong>NFPA 58</strong>:9.4.1.3</td>
</tr>
<tr>
<td>(Propane or Liquefied Petroleum Gas) on each end and each side.</td>
<td><strong>CFR 49</strong>:172.101</td>
</tr>
<tr>
<td>&quot;155-71D&quot; &quot;155-714D&quot; &quot;155-716D&quot; &quot;V-302BB&quot;</td>
<td><strong>CFR 49</strong>:172.302</td>
</tr>
<tr>
<td>Cargo tanks must also be marked with the proper UN number (1075) and proper DOT placard on each end and each side.</td>
<td><strong>CFR 49</strong>:172.328</td>
</tr>
<tr>
<td>&quot;1075D&quot; &quot;1075G&quot; &quot;1075P&quot; &quot;CG-126&quot;</td>
<td><strong>CFR 49</strong>:172.332</td>
</tr>
<tr>
<td>2.) Cargo tanks of specification MC-330 and MC-331 must be marked near the dataplate with &quot;QT&quot; for quenched and tempered steel or &quot;NQT&quot; for not quenched and tempered steel construction.</td>
<td><strong>CFR 49</strong>:172.328(c)</td>
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<tr>
<td>&quot;V-65&quot; or &quot;V-66&quot;</td>
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<tr>
<td>3.) The manual remote shutoff device used to close the internal valve must be marked &quot;Emergency Shutoff&quot; in letters at least .75&quot; in height..</td>
<td><strong>CFR 49</strong>:172.328(d)</td>
</tr>
<tr>
<td>&quot;V-134&quot;</td>
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<tr>
<td>4.) Cargo tanks must be regularly inspected and tested. The date and type of test must be marked near the identification plate or near the front head. The annual test decal should always be present. The 5-year test decal should be applied when needed.</td>
<td><strong>CFR 49</strong>:180.415</td>
</tr>
<tr>
<td>&quot;V-31&quot; or &quot;V-32&quot;</td>
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<tr>
<td>5.) The inlets and outlets on the cargo tank must be marked &quot;liquid&quot; or &quot;vapor&quot; to designate whether the opening communicates with the liquid or vapor space of the container. Note: a filling connection that communicates with the vapor space may be marked &quot;Spray Fill&quot;. Note: Gauging devices, thermometer wells and pressure relief valves are exempt from this marking.</td>
<td><strong>CFR 49</strong>:178.337-9</td>
</tr>
<tr>
<td>&quot;V-90-5&quot; or &quot;V-91-5&quot;</td>
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<tr>
<td>6.) Cargo tank motor vehicles are required to stop at all railroad crossings. Although not part of the code, a sign reading &quot;This Vehicle Stops at Railroad Crossings&quot; offers other vehicles a warning of these impending stops.</td>
<td><strong>CFR 49</strong>:392.10</td>
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<tr>
<td>&quot;17042D&quot; or &quot;10742&quot;</td>
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General Procedural Signage

This section of the guideline covers some specialty signage suggested for certain procedures performed in the propane industry. This signage is not necessarily required by code, but provides some practical reference or notice for a system or procedure.

The suggested signage is listed in double quotes.

Cylinder and Tank Filling Information

1.) Proper cylinder filling procedures must be closely followed for the safety of the filling attendant and for the propane consumer. The proper procedures should be posted at the refilling area for ready reference.
   "1279" "P-101" "P-109" "P-108"

2.) Cylinders must be approved for propane service. The filling operator must verify that the cylinder is approved for propane, in good condition and has a current date code.
   "1279" "P-102"

3.) The consumer should be aware of the proper procedure for transporting cylinders.
   In enclosed spaces of vehicles, cylinders greater than 4.2 lbs. propane capacity must be hauled with the relief valve in communication with the vapor space.
   In open vehicles, cylinders greater than 45 lbs. propane capacity must be hauled with the relief valve in communication with the vapor space.
   "1279" "CYL 20 GA"

4.) Engines must be shut off before any refilling procedures commence. The source of ignition from an idling vehicle or a generator on an RV can easily be overlooked.
   "2929-9"

Buried Pipeline Marking

Underground piping systems will inevitably require locating and marking to prevent damage to the piping during site construction or remodeling. During installation, the piping system should be marked with either tracer wire or tracer tape.
Certain construction jobs require the proposed buried gas line route be marked with white flags to avoid interference with other utilities.
Existing buried gas lines are marked with yellow flags giving excavators a visual awareness of their presence.
   "LP-1" "LP-2" "LP-5"
Bulk Storage Signs

The Bulk Storage Signs referenced in the guide are shown here in the order they appear in the body of the text. Depending on their purpose, the sign material is either steel, hard poly or self-adhesive vinyl as noted with their graphic and description.

**PROPANE**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>155-71D</td>
<td>2&quot; Letters Vinyl</td>
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<tr>
<td>155-714D</td>
<td>4&quot; Letters Vinyl</td>
</tr>
<tr>
<td>155-716D</td>
<td>6&quot; Letters Vinyl</td>
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**LIQUID PETROLEUM GAS**

<table>
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<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>V-302BB</td>
<td>4&quot; X 36&quot; Vinyl</td>
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**FLAMMABLE**

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<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>V-24BB</td>
<td>4&quot; X 22&quot; Vinyl</td>
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**NO SMOKING**

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<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>916D</td>
<td>2&quot; Letters Vinyl</td>
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<tr>
<td>916D-3</td>
<td>3&quot; Letters Vinyl</td>
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**NOTICE**

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<th>Description</th>
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<tr>
<td>1317V</td>
<td>10&quot; X 14&quot; Steel</td>
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**NO TRESPASSING**

<table>
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<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>949</td>
<td>4&quot; X 24&quot; Steel</td>
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<tr>
<td>949D</td>
<td>4&quot; X 24&quot; Vinyl</td>
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**PROPA G-CONTAINER**

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<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>P-135</td>
<td>10&quot; X 12&quot; Poly</td>
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**PROPA G-CONTAINER**

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<tr>
<td>P-148</td>
<td>12&quot; X 12&quot; Poly</td>
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**STOP**

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<th>Code</th>
<th>Description</th>
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<tr>
<td>945B</td>
<td>11&quot; X 17&quot; Steel</td>
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**LIQUID VALVE**

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<tr>
<td>P-81</td>
<td>10&quot; X 12&quot; Poly</td>
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**EMERGENCY SHUTOFF VALVE**

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<tr>
<td>P-82</td>
<td>10&quot; X 12&quot; Poly</td>
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**EMERGENCY SHUTOFF VALVE**

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<tr>
<td>P-81</td>
<td>10&quot; X 12&quot; Poly</td>
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**TANK CAR CONNECTED**

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<tr>
<td>945B</td>
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Cylinder Systems Signs

The Cylinder System Signs referenced in the guide are shown here in the order they appear in the body of the text. The sign material is all self-adhesive vinyl.

![Cylinder Systems Signs](image)

**S DOT 1.25" X 3.75" Vinyl**

**CYL 2 in 1 3" X 7" Vinyl**

**SP-53R 3" X 7" Vinyl**

**5-C86 3" X 1.875" Vinyl**

**HZ-116 2.2" X 5" Vinyl**

**V-88-1 .375" X .375" Vinyl**
24 per Sheet

**V-88-2 .375" X .375" Vinyl**
24 per Sheet

**V-88-3 .375" X .375" Vinyl**
24 per Sheet

**V-128 4.75" X 4" Vinyl**
Cargo Tank Signs

The Cargo Tank Signs referenced in the guide are shown here in the order they appear in the body of the text. Depending on their purpose, the sign material is either steel, aluminum, hard poly or self-adhesive vinyl as noted with their graphic and description.

**PROPANE**
155-71D 2" Letters Vinyl
155-714D 4" Letters Vinyl
155-716D 6" Letters Vinyl

**LIQUID PETROLEUM GAS**
V-302BB 4" X 36" Vinyl

**1075**
1075D 11" X 11" Vinyl
1075G 11" X 11" Magnetic
1075P 11" X 11" Poly

**1075**
CG-126 Flip Type Placard
1075 - 1005
13.5" X 13.5" Aluminum

**MPH69** Slide-in Placard Holder
(Placard sold separately)

**V-65** 3" X 4.5" Vinyl

**V-66** 3" X 4.5" Vinyl

**V-31** Annual 6" X 15.5" Vinyl

**V-32** Five Year 6" X 15.5" Vinyl

**EMERGENCY SHUTOFF**
V-134 2.5" X 6" Vinyl

**CAUTION**
THIS VEHICLE MAKES FULL STOPS AT ALL RAILROAD CROSSINGS

**17042** 5.5" X 20" Steel

**WE STOP AT ALL RR CROSSINGS**
17042D 2" X 36" Vinyl
General Procedural Signs

The General Procedural Signs referenced in the guide are shown here in the order they appear in the body of the text. Depending on their purpose, the sign material is either steel, hard poly or self-adhesive vinyl as noted with their graphic and description.

Buried Pipeline Signs

The Buried Pipeline Signs referenced in the guide are shown. Although these are not signs to be posted in the normal sense, they are none the less important in their own particular usage.