INDUSTRIAL GAS CYLINDERS
COLOR CODING
TD 08/15/E
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ANNEX 11

Color coding chart for Industrial gases
1. INTRODUCTION

Across the Middle East, there are no clear standards for colour coding of cylinders for different product lines. The prevalence of large numbers of different color codes for same product line within the industries under MEGA is regarded as potentially misleading and hazardous. There is a high risk of the wrong product(s) being filled if the labels are not legible. Although the label fixed on the cylinder remains the primary means of identifying the product it contains, cylinder color coding is routinely used as the secondary means of identification to ensure that the correct product is filled, supplied and used.

The hazards associated with filling a wrong product into cylinders include loss of production, property damage and injury or death to personnel.

There is an essential requirement of harmonizing of cylinder color codes with different product lines to eliminate filling errors at source and the incorrect product delivery to the consumer’s supply systems.

2. SCOPE AND PURPOSE

2.1. Scope

The scope of this document is to propose all member companies, other than Kingdom of Saudi Arabia, to follow the BS EN 1089-3 standard of color code for owned cylinders to get a fully harmonized color coding system.

MEGA member companies in the Kingdom of Saudi Arabia will follow a separate color code. The colour code outlined in this document applies specifically to gas cylinders for pure gases, gas mixtures for industrial applications, and breathing gas (non medical) use.

Client-owned cylinders or cylinders to be exported are exempted from the scope of this publication.

2.2. Purpose

The purpose of this document is to provide guidance to all industrial gas cylinder fillers and suppliers on the implementation of and adherence to the color coding principles outlined in BS EN 1089-3.

It is also intended that this document provide guidance to local regulatory authorities about the correct use of color coding to identify the gas contained in the cylinder.

3. CYLINDER COLOR CODING PRINCIPLES

BS EN 1089-3 was introduced as a European standard for the color coding of gas cylinders, so that there could be a common approach to color coding of all cylinders across Europe. MEGA recommends this standard to be followed by all industrial gas cylinders suppliers across GCC. The basic principle used in BS EN 1089-3 for the color coding of cylinders is that only the shoulder of the cylinders should be used to define either product or the hazard associated with the gas.

For cylinders in industrial gas service, it is recommended that the bodies of all industrial gas cylinders be painted grey or the same colour as the shoulder.
Cylinders in medical gas service shall follow the guidelines outlined in MEGA Technical Document, *TD 09/15/E-Medical Gas Cylinders Colour Coding*.

4. **COLOR CODING**

4.1. **Basic hazard color coding**

The color coding of the cylinder shoulder is determined by the hazard associated with the contents as prescribed by the transport labels (cylinders product label).

The four categories are defined below:

<table>
<thead>
<tr>
<th>Gas Property</th>
<th>Shoulder color</th>
<th>RAL Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxic and /or Corrosive</td>
<td>Yellow</td>
<td>1018</td>
</tr>
<tr>
<td>Flammable</td>
<td>Red</td>
<td>3000</td>
</tr>
<tr>
<td>Oxidizing</td>
<td>Light Blue</td>
<td>5012</td>
</tr>
<tr>
<td>Inert</td>
<td>Bright Green</td>
<td>6018</td>
</tr>
</tbody>
</table>

The table gives the scale of hazard in descending order. When a gas has more than one hazard, the color coding of the shoulder is defined by highest hazard, as above.

4.2. **Cylinder shoulder color**

BS EN 1089-3 specifies the color coding for the most commonly used industrial gases and industrial gas mixtures.
The color codes specified for the gases covered by this standard include:

<table>
<thead>
<tr>
<th>Gas</th>
<th>Color</th>
<th>Shoulder Color</th>
<th>RAL number</th>
<th>RAL designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argon</td>
<td>Dark Green</td>
<td><img src="image" alt="Argon Shoulder" /></td>
<td>6001</td>
<td>Emerald Green</td>
</tr>
<tr>
<td>Nitrogen</td>
<td>Black</td>
<td><img src="image" alt="Nitrogen Shoulder" /></td>
<td>9005</td>
<td>Jet Black</td>
</tr>
<tr>
<td>Carbon Dioxide</td>
<td>Grey</td>
<td><img src="image" alt="Carbon Dioxide Shoulder" /></td>
<td>7037</td>
<td>Dusty Grey</td>
</tr>
<tr>
<td>Helium</td>
<td>Brown</td>
<td><img src="image" alt="Helium Shoulder" /></td>
<td>8008</td>
<td>Olive Brown</td>
</tr>
<tr>
<td>Oxygen</td>
<td>White</td>
<td><img src="image" alt="Oxygen Shoulder" /></td>
<td>9010</td>
<td>Pure White</td>
</tr>
<tr>
<td>Mixtures of inert gases</td>
<td>Bright Green</td>
<td><img src="image" alt="Mixtures Shoulder" /></td>
<td>6018</td>
<td>Yellow Green</td>
</tr>
<tr>
<td>Category</td>
<td>Color</td>
<td>Code</td>
<td>Code/Color</td>
<td></td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------------</td>
<td>------</td>
<td>----------------------------</td>
<td></td>
</tr>
<tr>
<td>Flammable</td>
<td>Red</td>
<td>3000</td>
<td>Flame Red</td>
<td></td>
</tr>
<tr>
<td>Flammable mix</td>
<td>Red</td>
<td>3000</td>
<td>Flame Red</td>
<td></td>
</tr>
<tr>
<td>Acetylene</td>
<td>Maroon</td>
<td>3009</td>
<td>Oxide Red</td>
<td></td>
</tr>
<tr>
<td>Nitrous Oxide</td>
<td>Blue</td>
<td>5010</td>
<td>Gentian Blue</td>
<td></td>
</tr>
<tr>
<td>Oxidizing Mix</td>
<td>Light Blue</td>
<td>5012</td>
<td>Light Blue</td>
<td></td>
</tr>
<tr>
<td>Toxic or Corrosive</td>
<td>Yellow</td>
<td>1018</td>
<td>Zinc Yellow</td>
<td></td>
</tr>
<tr>
<td>Toxic and Corrosive</td>
<td>Yellow &amp;</td>
<td>1018 &amp; 3000</td>
<td>Zinc Yellow Flame Red</td>
<td></td>
</tr>
</tbody>
</table>
5. **CYLINDER BODY**

All industrial gases and industrial gas mixtures shall have their shoulder areas painted as outlined in sections 4.1 and 4.2. The color of the cylinder body is not mandated. Gas suppliers may choose their own colours or to use the same colour as the shoulder colour. Caution must be exercised to not conflict or confuse with previously used colour codes, or colour codes required by the MEGA pamphlet outlining the colour codes for Medical Gases.

MEGA recommends that when a neutral body colour is desired, the colour Grey be used.

<table>
<thead>
<tr>
<th>Toxic Flammable mix</th>
<th>Yellow &amp; Red</th>
<th>1018 &amp; 3000</th>
<th>Zinc Yellow Flame Red</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Industrial gas cylinder color code for GCC (KSA excluded)

<table>
<thead>
<tr>
<th>Oxygen</th>
<th>Nitrogen</th>
<th>Argon</th>
<th>Hydrogen</th>
<th>Acetylene</th>
<th>Carbon dioxide</th>
<th>Helium</th>
<th>Carbon Monoxide</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Oxygen" /></td>
<td><img src="image2" alt="Nitrogen" /></td>
<td><img src="image3" alt="Argon" /></td>
<td><img src="image4" alt="Hydrogen" /></td>
<td><img src="image5" alt="Acetylene" /></td>
<td><img src="image6" alt="Carbon dioxide" /></td>
<td><img src="image7" alt="Helium" /></td>
<td><img src="image8" alt="Carbon Monoxide" /></td>
</tr>
</tbody>
</table>
6. **CYLINDER VALVE GUARD COLOR CODING**

There is no requirement to color code the cylinder valve guards or protective caps.

7. **CYLINDER BUNDLES**

There is no requirement in BS EN 1089-3 to color code the cylinders used in cylinder bundles. If the gas supplier decides to color code the cylinders in cylinder bundles, then the principles of this pamphlet shall be applied.

8. **TERMS AND DEFINITIONS**

For the purposes of this document, the following terms and definitions apply.

8.1. **Gas for medical use**

Any gas or mixture of gases intended to be administered to patients for therapeutic, diagnostic or prophylactic purposes, with or without pharmacological action, or to be used for surgical tools, and it covers both medicinal and medical gases (see ISO 5145). The colour code for medical gases is mandated in MEGA Technical Document, *TD 09/15/E-Medical Gas Cylinders Colour Coding*. 
8.2. **Inert gas**

Non-toxic, non-corrosive, non-flammable and non-oxidizing gas or gas mixture.

8.3. **Industrial gas**

Gas or gas mixtures not for medical or for breathing gas use.

8.4. **Breathing gas**

Gas filled in cylinders for breathing and diving application, excluding gas for medical use.

9. **SUPPLIER RESPONSIBILITIES**

Prior to delivery of filled cylinders to customers, it is the supplier’s responsibility to ensure that the cylinders are correctly labelled and painted in accordance with this standard.

All new cylinders to be put into service after publication of this standard are to follow it immediately.

Suppliers are to implement this standard as of the date of publication. All existing cylinders should be converted to the new standard as quickly as is practicable, but in any event no later than later than 31st December 2019.

10. **REFERENCES**

- BS EN 1089-3
