



THE SAFE HANDLING OF GAS CYLINDERS AT WASTE FACILITIES

LEAFLET 2

Revision 6: 2016

British Compressed Gases Association

in partnership with:

The Environment Agency

Natural Resources Wales

The Scottish Environment Protection Agency

The Northern Ireland Environment Agency

*A transportable gas container should be regarded as safe for disposal
only if it has been treated as described in this document*



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THE SAFE HANDLING OF GAS CYLINDERS AT WASTE FACILITIES

Recommended procedure for the safe disposal of transportable gas containers.

A transportable gas container (gas cylinder) received at a waste management facility or by scrap metal merchants is not to be subjected to any processing or disposal operations until it has been established that the gas cylinder is in a safe condition and that the receiver has a legal right to do so. Cylinders containing residual gas represent a serious potential safety hazard to persons attempting to process them and some gases may also present a possible environmental hazard. This leaflet details the correct procedures to follow.

1. All gas cylinders being accepted as controlled waste at a waste management facility or scrap metal merchants should meet the requirements of the Duty of Care Regulations enacted under the Environmental Protection Act (1), Section 34. In Northern Ireland refer to the Waste and Contaminated Land (Northern Ireland) Order (2), Article 5.

The basic responsibilities are to:

(i) Store wastes in suitable containers at secure locations, in a manner that prevents releases of wastes.

NOTE: Gases are only to be stored in approved containers i.e. gas cylinders. Gas cylinders are to be constructed and tested in accordance with the requirements of The Carriage of Dangerous Goods and the Use of Transportable Pressure Equipment Regulations (3). In Northern Ireland, The Carriage of Dangerous Goods and the Use of Transportable Pressure Equipment (Amendment) Regulations (Northern Ireland) (4).

(ii) Label the waste containers so that it is clear what is in them.

(iii) Check that the wastes are subsequently handled by those who hold an appropriate environmental authorisation.

(iv) Provide documentation with any waste transfer that accurately describes the waste and contains the relevant European Waste Catalogue (EWC) code for the waste, e.g.

- 16 05 04* - Gases in pressure containers containing dangerous substances.
- 16 05 05 - Gases in pressure containers.

Further information is available from your Waste Regulator on the classification of waste (Refer to Technical Guidance WM2 - *Interpretation of the definition and classification of hazardous waste* (6)).

2. Authority to dispose of a gas cylinder shall be obtained from the owner of the cylinder. Cylinders are not to be disposed of without the consent of the rightful owner. For advice in identifying the owner see Clause 10(i).

NOTES:

(1) The vast majority of industrial gas cylinders in circulation in the UK remain the property of the gas suppliers. They are supplied to gas users under a rental agreement, which requires the user to pay rental on the cylinder until its return for potential further use. Therefore the simplest and best way to deal with cylinders that are no longer required is to identify the owner (gas supplier) and request that they be collected. Even

if the cylinders were not originally supplied to the site where they are discovered, the owner (gas supplier) will make arrangements to collect them.

(2) Many Liquefied Petroleum Gas (LPG) cylinders belong to companies who are members of the UK LPG Trade Association (UKLPG). Contact the UKLPG for further advice. Refer to Appendix 2.

(3) Many gas cylinders have been stolen and illegally sold for their scrap metal value. The Scrap Metal Dealers Act (5) makes it a criminal offence to buy (or barter) scrap metal for cash. Itinerant street collectors are exempted up to certain limits but require to be licensed by the Local Authority.

3. Waste gas cylinders are to be segregated from other waste types being accepted at the waste management site; on receipt it shall be established if the cylinders are gas-free and safe for processing / disposal.

4. All gas cylinders should be held in a carefully controlled storage area that meets the requirements of BCGA Code of Practice 44 (11) and UKLPG Code of Practice 7 (13) for LPG cylinders. The basic principles of which are to keep cylinders in a secure, clean and free from contaminants, well-ventilated store, away from sources of ignition and combustible material.

5. The Health and Safety Executive (HSE) Leaflet, Waste 03 (7), provides guidance for dealing with unwanted or unidentifiable compressed gas cylinders ('orphaned' cylinders) that appear in the waste stream, including advice on correct storage.

6. All gas cylinders received shall be inspected by a competent person. The competent person is to confirm that they have the owner's permission to dispose of the cylinder(s), the cylinder(s) has been made safe for disposal or identify what other action(s) need to be taken to ensure that the cylinder is managed in a safe manner.

WARNING: Never open a gas valve and sniff the contents. Some gases are harmful to the environment, do not release any gas into the atmosphere until it has been correctly identified and assessed as safe to release. Only adequately trained competent personnel are to remove the gas contents or any fixtures and fittings from a gas cylinder.

7. Gas cylinders being disposed of by a gas supplier, or his approved agent, as authorised scrap metal waste will have been made safe for disposal. These cylinders should meet the following criteria:

(i) The contents will have been removed safely by a competent company following an approved process, and the cylinder identified as safe for disposal; and

(ii) The valve is removed and the cylinder will have been rendered unserviceable by following one of the methods described in standards such as:

- BS EN 1802 (8), *Transportable gas cylinders. Periodic inspection and testing of seamless aluminium alloy gas cylinders.*
- BS EN 1968 (9), *Transportable gas cylinders. Periodic inspection and testing of seamless steel gas cylinders.*
- BS EN ISO 11623 (10), *Transportable gas cylinders. Periodic inspection and testing of composite gas cylinders.*

This may include:

- Destroying the cylinder neck thread
- Mechanical means (e.g. crushing).
- The burning of an irregular hole in the neck.
- Cutting the body into at least two pieces.

WARNING: Cylinders not meeting the criteria within 7(i) and 7(ii) should not be considered safe for disposal.

NOTE: With the agreement of the owner disposal by one of the listed means can be carried out by the scrap metal merchant provided the owner witnesses and retains document evidence of correct disposal.

8. Where it is identified that the gas cylinder is the property of one of the gas suppliers (and it is not authorised scrap metal waste) then contact the gas supplier. The gas supplier will make arrangements to collect their cylinders. The following information may be requested:

- (i) The number of cylinders involved.
- (ii) Their approximate dimensions.
- (iii) Details of any labels or painted marks.
- (iv) The stamp markings on the cylinders.

The contact details for the major suppliers of industrial gases in the UK are in Appendix 2.

NOTE: The gas supplier will only carry out an inspection of the gas cylinder(s), and subsequently remove the gas cylinder(s), if it is safe to do so.

9. The BCGA and the UKLPG have joined forces to improve the means by which cylinders belonging to their members can be removed promptly from civic amenity sites. By calling a maximum of three numbers these cylinders will be collected free-of-charge, within 15 working days, by authorised staff carrying appropriate identification. Under this arrangement advice can also be provided on the disposal of non-refillable or unbranded cylinders (call 0800 0839652).

The numbers to contact are:

BOC cylinders	0800 111333
Calor Gas cylinders	01179 413721
All other cylinders	0800 0839652

A poster is available; refer to Appendix 3. To order A4 laminated copies of this poster, in either the English or Welsh language, for display at civic amenity sites call: 0800 0839652.

10. Where a gas cylinder is assessed as not safe for processing and/or disposal then the following information should be identified:

- (i) The owner of the gas cylinder(s). Ownership details will be provided on a contents label, if still attached (refer to BCGA TIS 6 (12)). Ownership of the cylinder can also be obtained from information permanently marked on the cylinder, e.g.

stampmarking. This can be found on the shoulder near the top, on the base of the cylinder, on a fixed guard, or on a foot-ring welded to the base of the cylinder. Some cylinders will have the owners details painted on the side of the cylinder.

(ii) The contents of the gas cylinder(s). The primary method of identifying the gas in a cylinder is the label. In its absence, colour may help to identify the contents or the hazard classification of the gas. The shape of the cylinder may also give a good indication of its contents. Refer to BCGA TIS 6 (12) or seek advice from the gas suppliers, BCGA or UKLPG). Figure 1 shows some typical gas cylinders.



These are tall and thin with a seamless construction. When empty they are relatively heavy for their size e.g. oxygen, nitrogen, etc.

These are short and squat with a welded construction. When empty they are light for their size e.g. butane & propane. However, there are similar shaped cylinders used for refrigerant gases but which will be of a different colour.

Figure 1: Typical cylinder designs.

This information can be used to contact the owner, to determine the contents of a cylinder and therefore to determine how best to process or dispose of the cylinder.

11. Individuals who own gas cylinders e.g. sport divers, are to ensure the cylinders are safe for disposal before depositing them at authorised waste sites. This should include releasing all gas pressure in a safe manner and, where safe and practical, removing the valve assembly from the cylinder. Some gases are sold in cylinders designed for one fill only (non-refillable), examples include balloon gas (helium) and calibration gases. These cylinders cannot be reused and it is the responsibility of the owner to ensure the cylinder is empty and rendered unfit for further use prior to disposal. The manufacturer / cylinder supplier will provide instructions on how to make the cylinder safe for disposal.

12. If the ownership, or contents of cylinders, cannot be identified, then the services of a specialist waste management company may be required. The BCGA website, refer to Appendix 2, provides a webpage with up-to-date information on '[Cylinder Recovery and Disposal](#)', including contact details of a number of specialist companies who are capable, on a commercial basis, of recovering and dealing with unwanted and/or unidentified cylinders.

13. It is recommended that organisations engaged in the processing and disposal of gas cylinders prepare written standard operating procedures. All personnel engaged in such activities are to be adequately trained. The procedures should include the actions to be taken

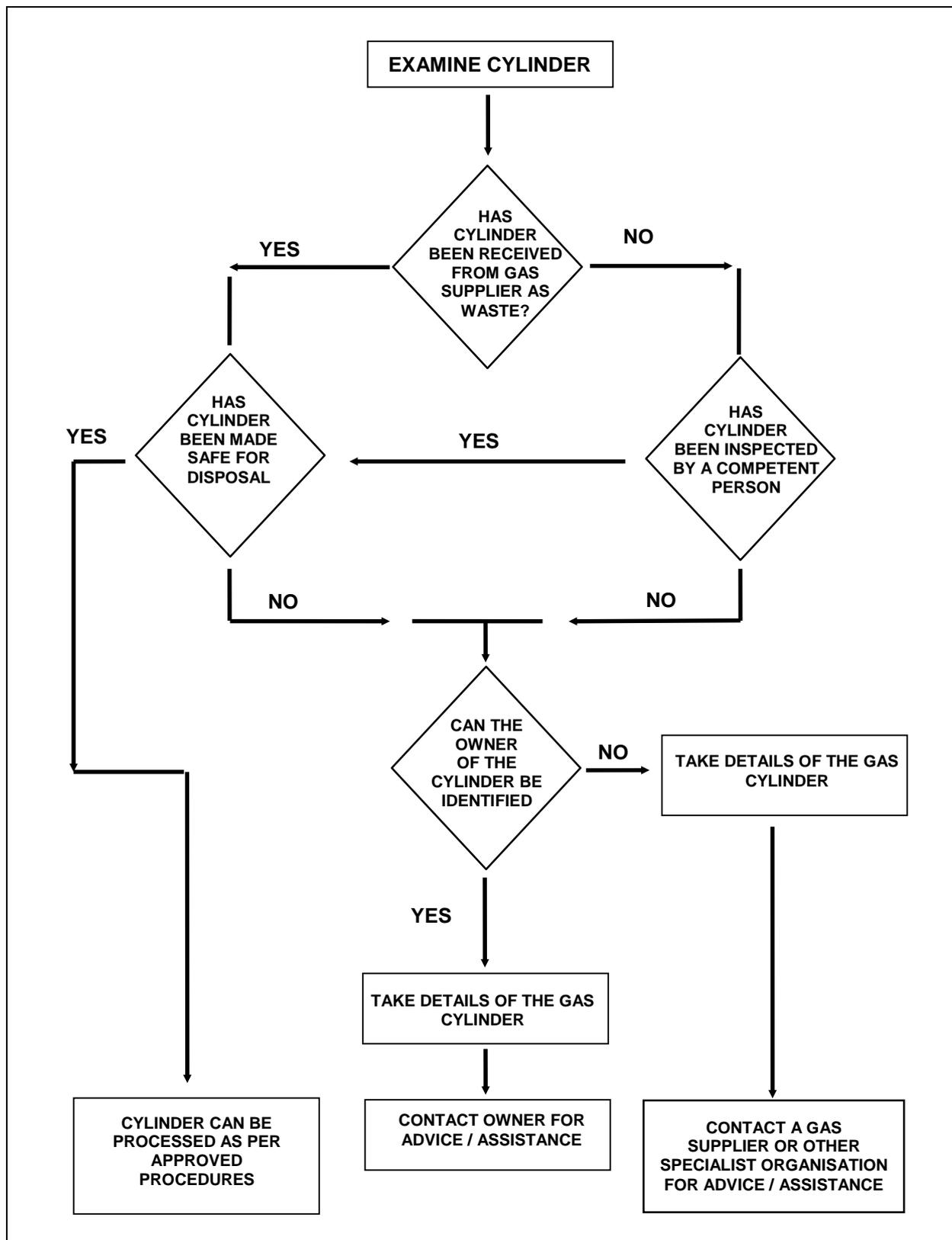
in the event of an emergency. Information on the key actions for dealing with emergency situations involving gas cylinders is available from BCGA or the gas suppliers.

14. A flowchart detailing the recommended procedure for the safe disposal of gas cylinders is displayed in Appendix 1.

References:

1. SI 1990 No. 43 Environmental Protection Act 1990
<http://www.legislation.gov.uk/ukpga/1990/43/contents>
2. SI 1997 No. 2778 Waste and Contaminated Land (Northern Ireland) Order 1997
<http://www.legislation.gov.uk/nisi/1997/2778/contents>
3. SI 2009 No. 1348 The Carriage of Dangerous Goods and the Use of Transportable Pressure Equipment Regulations (as amended) 2009.
<http://www.legislation.gov.uk/uksi/2009/1348/contents/made>
4. SR 2011 No. 365 The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment (Amendment) Regulations (Northern Ireland) 2011. <http://www.legislation.gov.uk/nisr/2011/365/made>
5. Act 2013 Ch. 10 The Scrap Metal Dealers Act 2013.
<http://www.legislation.gov.uk/ukpga/2013/10/enacted>
6. Environment Agency. Technical Guidance WM2 For NIEA Interpretation of the definition and classification of hazardous waste.
<http://www.environment-agency.gov.uk/business/topics/waste/32200.aspx>
http://www.doeni.gov.uk/niea/waste-home/regulation/regulations_hw/further_information.htm
7. HSE WASTE 03 Orphaned compressed gas cylinders in the waste and recycling industries. <http://www.hse.gov.uk/pubns/waste03.pdf>.
8. BS EN 1802 Transportable gas cylinders. Periodic inspection and testing of seamless aluminium alloy gas cylinders. <http://shop.bsigroup.com/>
9. BS EN 1968 Transportable gas cylinders. Periodic inspection and testing of seamless steel gas cylinders. <http://shop.bsigroup.com/>
10. BS EN ISO 11623 Transportable gas cylinders. Periodic inspection and testing of composite gas cylinders. <http://shop.bsigroup.com/>
11. BCGA Code of Practice 44 The storage of gas cylinders.
www.bcgga.co.uk/pages/index.cfm?page_id=6&title=publications
12. BCGA Technical Information Sheet 6 Cylinder identification colour coding and labelling requirements.
www.bcgga.co.uk/pages/index.cfm?page_id=6&title=publications
13. UKLPG Code of Practice 7 Storage of full and empty LPG cylinders and cartridges.
<http://www.uklpg.org/shop/codes-of-practice/>

RECOMMENDED PROCEDURE FOR SAFE DISPOSAL OF GAS CYLINDERS.



CONTACTS FOR ADVICE / ASSISTANCE

Industrial Gas Suppliers:

Air Liquide UK Ltd

Station Road
Coleshill
Birmingham
B46 1JY
Tel: 01675 462 424
www.uk.airliquide.com

Air Products PLC

Customer Services Team
2 Millennium Gate
West Mere Drive
Crewe
CW1 6AP
Tel: 0800 389 0202
www.airproducts.com

BOC

Customer Services Centre
Priestley Road
Worsley
Manchester
M28 5JU
Tel: 0800 111333
www.boconline.co.uk

Energas

(an Air Liquide Group Company)
Westmorland Street
Hull
HU2 0HX
Tel: 01482 329333
www.energas.co.uk

Trade Associations:

British Compressed Gases Association

4A Mallard Way
Pride Park
Derby
DE24 8GX
Tel: 01332 225120
www.bcga.co.uk

UKLPG

Camden House
Warwick Road
Kenilworth
Warwickshire
CV8 1TH.
Tel: 01926 513750
www.uklpg.org



The British Compressed Gases Association

The British Compressed Gases Association (BCGA) is the Trade Association representing companies that manufacture and distribute industrial, food and medical gases, related equipment and systems. The Association promotes technology and safe practice in the manufacture, handling and use of gases, principally through its publications. This includes the recovery and disposal of cylinders. www.bcgaco.uk

The Environment Agency:

The Environment Agency are an Executive Non-departmental Public Body responsible to the Secretary of State for Environment, Food and Rural Affairs.

The principal aims of the Environment Agency are to protect and improve the environment, and to promote sustainable development. The Head Office is responsible for overall policy and relationships with national bodies including Government. England is divided into three significant areas (the North and East; the West; the South East), however there are local offices across England.

Contact details for general enquiries:

National Customer Contact Centre

PO Box 544

Rotherham

S60 1BY

<https://www.gov.uk/government/organisations/environment-agency>

Information on local [Environment Agency offices](#)

Email – General enquiries - enquiries@environment-agency.gov.uk

Phone – General enquiries - 03708 506 506 (Monday to Friday, 8 am to 6 pm)

Emergencies - 0800 807060 (Freephone, 24 hour service).

The Scottish Environment Protection Agency:

The Scottish Environment Protection Agency (SEPA) is Scotland's environmental regulator. SEPA is a non-departmental public body, accountable through Scottish Ministers to the Scottish Parliament. Their main role is to protect and improve the environment. This includes helping to implement Scotland's National Waste Strategy.

Contact details for SEPA's Corporate Office are:

SEPA Corporate Office

Erskine Court

Castle Business Park

STIRLING

FK9 4TR

Tel: 01786 457700

www.sepa.org.uk

A list of regional offices can be located at

http://www.sepa.org.uk/about_us/contacting_sepa/regional_offices.aspx

Natural Resources Wales

Natural Resources Wales brings together the work of the Countryside Council for Wales, Environment Agency Wales and Forestry Commission Wales, as well as some functions of Welsh Government. Their purpose is to ensure that the natural resources of Wales are sustainably maintained, enhanced and used, now and in the future. Natural Resources Wales is the regulatory authority in Wales for a wide range of environmental legislation in Wales, including waste. Natural Resources Wales are the principal adviser to the Welsh Government on the environment, enabling the sustainable development of Wales' natural resources for the benefit of people, the economy and wildlife.

Contact Details:

Natural Resources Wales
Ty Cambria
29 Newport Road
Cardiff
CF24 0TP
<http://naturalresourceswales.gov.uk/>

Email - General enquiries: enquiries@naturalresourceswales.gov.uk

Phone - General enquiries: 0300 065 3000 (Monday to Friday, 8 am to 6 pm)

Minicom service: For the hard of hearing, a minicom service is available on 03702 422 549**

Incident hotline: 0800 807060 (Freephone, 24 hour service).

The Northern Ireland Environment Agency

The Northern Ireland Environment Agency (NIEA) is an Agency within the Department of Environment. They are the Environmental Regulator for Northern Ireland and lead in advising on, and in implementing, the Government's environmental policy and strategy. This includes responsibility for the implementation of the waste management policy and the promotion of a more sustainable approach to dealing with waste in Northern Ireland.

Contact details:

Klondyke Building
Cromac Avenue
Gasworks Business Park
Lower Ormeau Road
Belfast
BT7 2JA

General enquiries: 0845 302 0008

Hazardous Waste: 028 9056 9710

<http://www.doeni.gov.uk>

POSTER: HOW TO RETURN GAS CYLINDERS

GAS CYLINDERS ARE THE PROPERTY OF THE GAS SUPPLIER

Liquefied Petroleum Gas and Industrial Gas cylinders are the property of the companies named on the cylinders.

If you receive gas cylinders onto your site or yard, they should be stored securely and safely, and reported as below. The cylinders will be collected within 15 working days of your call.



RETURN THEM FREE OF CHARGE* TO THEIR LAWFUL OWNER

 **BOC**
A Member of The Linde Group

**FOR BOC
CYLINDERS
0800 111 333**

 **CALOR**

**FOR CALOR
CYLINDERS
01179 413 721**

**FOR ALL
OTHER GAS
CYLINDERS**

0800 083 9652

* Free of charge collection applies solely to UKLPG and BCGA members' reusable cylinders

 www.uklpg.org

 www.bcga.co.uk