

Transportable gas cylinders — Porous masses for acetylene cylinders

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National foreword

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English version

Transportable gas cylinders - Porous masses for acetylene cylinders

This CEN Report was approved by CEN on 3 November 2001. It has been drawn up by the Technical Committee CEN/TC 23.

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Foreword

This document (CR 14473:2002) has been prepared by Technical Committee CEN /TC 23, "Transportable gas cylinders", the secretariat of which is held by BSI.

This report is an agreed document containing data, information and other material for high porosity masses (monolithic) for acetylene cylinders which is not appropriate to an EN or HD but relates to the aims and work of CEN/TC 23.

This report has not included information and data sheets about non-monolithic porous masses.

Introduction

The information contained in this report was originally proposed as an informative annex to European Standard EN 1801, "Transportable Gas Cylinders – Filling conditions for single acetylene cylinders" and EN 12755, "Transportable gas cylinders – Filling conditions for acetylene bundles".

The Technical Committee CEN/TC 23 decided that due to the commercial nature of the information and the possible difficulties in maintaining an up-to-date standard, the information should be published as a CEN report.

This report has therefore been produced for reference purposes.

1 Scope

This report contains information regarding high porosity masses (monolithic) produced after 1988 and having received type approval from the competent authorities in the countries of the CEN members. The data is based on information provided by manufacturers as at 2000-02-29. This list does not claim to be exhaustive

For additional entries to the lists or a change of data, an application has to be made, to the CEN/TC 23 Secretariat with a copy of the type approval issued by the competent body.

A revision of the report in a two-year period, or after a certain number of new applications for an amendment or change of data, is envisaged. Any decisions will be taken at a plenary meeting of CEN/TC 23.

NOTE For further information contact the relevant national representative, e.g. for Germany contact Bundesanstalt für Materialforschung und -prüfung (BAM), D-12200 Berlin (Germany)

2 Data about high porosity masses

The filling conditions for the various high porosity masses for acetylene cylinders and acetylene bundles for the countries in Europe which are listed below are the result of the type approval of the porous masses made by the competent authority in the relevant country.

Basis for a new type approval by a competent authority is the European Standard EN 1800 + AC1 "Transportable gas cylinders - Acetylene cylinders - Basic requirements and definitions".

3 Country abbreviations

Countries approving a particular mass are identified in the list as follows:

AT	AUSTRIA	GR	GREECE
BE	BELGIUM	HR	CROATIA
CH	SWITZERLAND	IE	IRELAND
CZ	CZECH REPUBLIC	IT	ITALY
DE	GERMANY	IS	ICELAND
DK	DENMARK	LU	LUXEMBOURG
ES	SPAIN	NL	NETHERLANDS
FI	FINLAND	NO	NORWAY
FR	FRANCE	PT	PORTUGAL
GB	UNITED KINGDOM	SE	SWEDEN

4 Data sheets for individual acetylene cylinders

Data sheets numbers 1 to 27 for individual acetylene cylinders are listed in table 1.

The countries are ranked alphabetically in accordance with country abbreviation of clause 2.

The data contained in columns 2 to 6 was the basis for the type approval of the mass.



The values for 'weight of acetylene' (kg/l) include the total amount of acetylene, including saturation gas.

The weight of solvent in column 2 is specified weight of solvent (kg/l) of water capacity of the cylinder shell as given in the approval.

Column 3 lists the maximum weight of acetylene in (kg/l) of water capacity of the cylinder shell when the cylinder is 'empty'.

Data with question mark could not be clarified during the preparation of the technical report and is uncertain data.

Table 1 — Summary of data sheets for individual acetylene cylinders

Identification (name) of porous mass	Manufacturer	Solvent ¹⁾	Number of data sheet
AGA 1	AGA AB	acetone	1
AGA 2	AGA Cryo GmbH	acetone	2
AGA 2	AGA Cryo GmbH	DMF	3
AGA 4	AGA Cryo GmbH	acetone	4
AL 4	L'Air Liquide SA	acetone /DMF	5
JH-Coyne	Josef Heiser	acetone	6
Heiser-Eco	Josef Heiser	acetone	7
Heiser-Eco	Josef Heiser	DMF	8
Linde M 1	Linde AG	acetone	9
Linde M 1	Linde AG	without solvent	10
Linde M 1 A	Linde AG	acetone	11
Linde M 1 D	Linde AG	DMF	12
MAXI POR	Compagnia Navarro SA	acetone/DMF	13
NA	Compagnia Navarro SA	acetone/DMF	14
NLH	Technoplyn n.p.	acetone	15
NORAL	L'Air Liquide SA	acetone	16
POR 92	Technogas-Kraljevo	acetone	17
SIAD 2	SIAD S.p.A.	acetone	18
SIAD 2	SIAD S.p.A.	DMF	19
SIAD 3	SIAD S.p.A.	DMF	20
SIAD AF	SIAD S.p.A.	acetone	21
T 200	Technogas-Inos	acetone	22
T 200 A	Technogas-Inos	acetone	23
UL 1	Linde Technoplyn	acetone	24
UL 1	Linde Technoplyn	without solvent	25
BOC-COYNE	BOC LTD	acetone	26
BOC 1	BOC LTD	Acetone	27
¹⁾ DMF ... Dimethylformamid			

Data sheet No. 1

Individual acetylene cylinders					
Identification (name) of porous mass: AGA 1			Type of mass: monolithic Solvent: acetone		
Manufacturer: AGA AB S – 181 81 LIDINGO SWEDEN			Density (kg/l): 0,300 - 0,330 Porosity (%): 78 - 80		
Country	Weight of solvent (kg/l)	Weight of acetylene (kg/l)	Max. settled pressure (bar) 15 °C	Additional comments	Year of approval/ identification number
1	2	3	4	5	6
AT BE CH DE DK ES IE FR GB GR IT IS LU NO NL PT SE 0,320 FI	0,288 				

Data sheet No. 2

Individual acetylene cylinders					
Identification (name of porous mass:) AGA 2			Type of mass:	monolithic	
Manufacturer: AGA Cryo GmbH Industriestrasse 114 D-21107 Hamburg			Solvent:	acetone	
			Density (kg/l):	0,225 - 0,255	
			Porosity (%):	90 - 93	
Country	Weight of solvent (kg/l)	Weight of acetylene (kg/l)	Max. settled pressure (bar) 15 °C	Additional comments	Year of approval/identification number
1	2	3	4	5	6
AT	0,310	0,180 0,200	18 19	max. 10 l 40 - 54	1988 1978
BE	0,335	0,168	15		1983
CH	0,320	0,140 – 0,190*)	19	den. 0,240 por. 91 %	
DE	0,310	0,1800,200	18 19	< 5 l > 5 l	1970/05DM2 + 1971
DK	0,310	0,200	18		1980
ES	0,318	0,18	18		1988
IE					
FR	0,374	0,162	15	por. max. 92 %	1983
GB	0,310	0,200	18	por. max. 92 %	1977
GR					
IT					
IS	0,320	0,200	18		1980
LU					
NO	0,310	0,185	19		1971
NL	0,320 0,320 0,326	0,180 0,185 0,194	19	10,20 l 40,59 l 50 l	1966
PT					
SE	0,310	0,180 0,200	19	1 – 5 l 10 – 50 l	1980
FI	0,310	0,180 0,200	18 18	1 – 5 l 10 – 50 l	1980
*) 0,140 kg/l < 3 l 0,160 kg/l ≥ 3 - < 10 lt 0,170 kg/l ≥ 10 - < 20 lt 0,190 kg/l ≥ 20 - ≤ 60 lt					

Data sheet No. 3

Individual acetylene cylinders					
Identification (name) of porous mass: AGA 2			Type of mass: monolithic Solvent: DMF		
Manufacturer: AGA Cryo GmbH Industriestrasse 114 D – 21107 Hamburg			Density (kg/l): 0,225 – 0,255 Porosity (%): 90 - 93		
Country	Weight of solvent (kg/l)	Weight of acetylene (kg/l)	Max. settled pressure (bar) 15 °C	Additional comments	Year of approval/ identification number
1	2	3	4	5	6
AT	0,412	0,180	?		
BE					
CH					
DE					
DK					
ES					
IE					
FR					
GB					
GR					
IT	0,400	0,195	18		1994
IS					
LU					
NO					
NL					
PT					
SE					
FI					

Data sheet No. 4

Individual acetylene cylinders					
Identification (name) of porous mass: AGA 4			Type of mass:	monolithic asbestos free	
Manufacturer: AGA Cryo GmbH Industriestrasse 114 D – 21107 Hamburg			Solvent:	acetone	
			Density (kg/l):	0,265 - 0,295	
			Porosity (%):	89 - 92	
Country	Weight of solvent (kg/l)	Weight of acetylene (kg/l)	Max. settled pressure (bar) 15 °C	Additional comments	Year of approval/ identification number
1	2	3	4	5	6
AT	0,310	0,180 0,200	18 19	< 20 l 20 – 54 l	1995/A-AGA 4
BE					
CH					
DE	0,310	0,180 0,200	18 19	< 20 l ≥ 20 l	1993/05 DM 4
DK	0,310	0,180 0,200	18	< 20 l ≥ 20 l	1994
ES	0,310	0,200	18		1995
IE					
FR	0,310	0,200	18		1997
GB		0,180 0,200	18	< 20 l ≥ 20 l	1993
GR					
IT					
IS					
LU					
NO	0,310	0,180 0,200	19	< 20 l ≥ 20 l	1994
NL	0,326	0,180 0,194	18	< 20 l 20 – 54 l	1993
PT					
SE	0,310	0,180 0,200	19	< 20 l ≥ 20 l	1994
FI	0,310	0,180 0,200	19	< 20 l ≥ 20 l	1993

Data sheet No. 5

Individual acetylene cylinders					
Identification (name) of porous mass: AL 4			Type of mass:	monolithic	
Manufacturer: L'Air Liquide SA 75 Quai d'Orsay F – 75321 Paris Cedex 07			Solvent:	acetone/DMF	
			Density (kg/l):	0,238 – 0,262	
			Porosity (%):	90 - 92	
Country	Weight of solvent (kg/l)	Weight of acetylene (kg/l)	Max. settled pressure (bar) 15 °C	Additional comments	Year of approval/ identification number
1	2	3	4	5	6
AT					
BE	0,348	0,174		acetone	1963
	0,335	0,169		acetone	
	0,386	0,176		DMF	
CH					
DE	0,310	0,200	19		
DK	0,325	0,194		20 l cap. por. 90 – 92 %	1977
ES	0,328	0,167		acetone por. 91 %	
IE					
FR	0,354	0,181		Acetone	1983/1996
	0,327	0,181		acetone	1996
	0,407	0,192		DMF por. 91 %	1984/1998
GB	0,308	0,176		acetone por. 91 %	1969
GR					
IT					
IS					
LU					
NO	0,320	0,185		acetone por. 90 – 92 % ?	1971/1973
NL	0,326	0,180		Acetone	1982
	0,400	0,194		DMF por. 91 % 50 l cap.	1972
PT	0,354	0,181		acetone	1963
	0,327	0,181		acetone	1983
	0,407	0,192		DMF por. 91 %	
SE	0,338 ?	0,178		acetone	1968
	0,357	0,183		por. 90 – 92 % den. 0,25	
FI					

Data sheet No. 6

Individual acetylene cylinders					
Identification (name) of porous mass: JH-COYNE			Type of mass:	monolithic	
Manufacturer: Josef Heiser Postfach 1 A – 3291 Kienberg/Gaming			Solvent:	acetone	
			Density (kg/l):	0,260 – 0,280	
			Porosity (%):	89 - 91	
Country	Weight of solvent (kg/l)	Weight of acetylene (kg/l)	Max. settled pressure (bar) 15 °C	Additional comments	Year of approval/ identification number
1	2	3	4	5	6
AT	0,320 0,305 0,305 0,320	0,175 0,1665 0,185 0,185	15 18 18 18	for all sizes ≤ 10 l 20 – 50 l 60 l welded only	1969 1981 1981 1981
BE	0,320	0,175	18		1969
CH	0,335	0,175 0,184	18 18	Re-qualified	1972
DE	0,305	0,1665 0,1575	18 18	≤ 10 l 20 – 50 l	1978/02 A M5
DK	0,320	0,175	18		
ES	0,330	0,187	18		
IE	0,330	0,184	18		
FR					
GB	0,330	0,184	18		1977
GR	0,320	0,175	18		
IT	0,320	0,175	18		
IS	0,320	0,175	18		
LU					
NO	0,320	0,185	18	5, 10, 20, (27) l 40 – 50 l	1977 1975
NL	0,330 0,320	0,185 0,180	18	20 – 50 l 5 – 10 l	1974 1985
PT	0,330	0,187	18		
SE	0,300	0,184	18	≤ 10 l	1978
FI	0,320 0,330	0,175 0,185	18	≤ 10 l 20 – 50 l	1976/77/80

Data sheet No. 7

Individual acetylene cylinders					
Identification (name) of porous mass:) Heiser-Eco			Type of mass: monolithic asbestos free		
Manufacturer: Josef Heiser Postfach 1 A – 3291 Kienberg/Gaming			Solvent: acetone		
			Density (kg/l):	0,23 – 0,26	
			Porosity (%):	89,0 – 92,0	
Country	Weight of solvent (kg/l)	Weight of acetylene (kg/l)	Max. settled pressure (bar) 15 °C	Additional comments	Year of approval/ identification number
1	2	3	4	5	6
AT	0,310	0,180	18	< 10 l	1993
	0,310	0,190	19	10 - < 20 l	1993
	0,310	0,200	19	20 – 50 l	1993
BE	0,326	0,170	15	5 – 50 l	1993
CH	0,310	0,160 ?	15	3 - < 10 l	1992/92310-11
	0,310	0,170 ?	18	10 - < 20 l	1993
	0,310	0,190 ?	19	20 – 50 l	1993
DE	0,310	0,200	19	20 – 50 l	1993
		0,190	19	20 l	02 AM 100
	0,310	0,190	20		
DK	0,310	0,200 0,190	19		
ES	0,310	0,180	18	3 – 10 l	1993
	0,310	0,190	19	10 – 20 l	1993
	0,310	0,200	19	20 – 50 l	1993
IE					
FR	0,310	0,180	19	5 – 10 l	1997
	0,310	0,190	19	10 – 20 l	1997
	0,310	0,200	19	20 – 50 l	1997
GB	0,310	0,180	18	< 10 l	1993
	0,310	0,190	19	10 – < 20 l	1993
	0,310	0,200	19	20 – 50 l	1993
GR					
IT					
IS					
LU					
NO					
NL	0,326	0,194	18	5 – 50 l	1993
PT	0,310	0,180		< 10 l	
SE	0,310	0,180		3 - < 10 l	1993
	0,310	0,190		10 - < 20 l	
	0,310	0,200		20 – 54 l	
FI	0,310	0,180		< 10 l	1993
	0,310	0,190		10 - < 20 l	
	0,310	0,200		> 20 l	

Data sheet No. 8

Individual acetylene cylinders					
Identification (name) of porous mass:) Heiser-Eco			Type of mass:	monolithic asbestos free	
Manufacturer: Josef Heiser Postfach 1 A – 3291 Kienberg/Gaming			Solvent:	DMF	
			Density (kg/l):	0,23 – 0,26 kg/l	
			Porosity (%):	89,0 – 92,0	
Country	Weight of solvent (kg/l)	Weight of acetylene (kg/l)	Max. settled pressure (bar) 15 °C	Additional comments	Year of approval/ identification number
1	2	3	4	5	6
AT	0,400	0,200	18	20 – 60 l	1995
BE					
CH	0,400	0,215	18	40 – 60 l	1995
DE					
DK					
ES					
IE					
FR					
GB					
GR					
IT					
IS					
LU					
NO					
NL	0,400	0,194	18	50 l	2000
PT					
SE					
FI					