



AK GRUP YANGIN SÖNDÜRME SİS. MÜH. TİC. LTD. ŞTİ.

FM200 GAZLI YANGIN SÖNDÜRME SİSTEMİ

(MEKANİK)

KATALOG VE SERTİFİKALARI

İÇİNDEKİLER

- 1. FM200 Gazlı Söndürme Sistemi Silindir Katalog ve Sertifikaları**
- 2. FM200 Gazlı Söndürme Sistemi Vana Ve Aksesuarları Katalog Ve Sertifikaları**
- 3. FM200 Gazlı Söndürme Sistemi Manometre Katalog Ve Sertifikaları**
- 4. FM200 Gazlı Söndürme Sistemi Nozul Katalog Ve Sertifikaları**
- 5. FM200 Gaz MSDS Ve Sertifikaları**



AK GRUP YANGIN SÖNDÜRME SİS. MÜH. TİC. LTD. ŞTİ.

1. FM200 Gazlı Söndürme Sistemi Silindir Katalog ve Sertifikaları



AK GRUP YANGIN SÖNDÜRME SİSTEMLERİ MEKANİK TESİSAT MÜHENDİSLİK SANAYİ VE TİC.LTD.ŞTİ.

İvedik Org.San.Bölg. 1468 Cad. No:139

Yenimahalle /ANKARA

TEL: 0312 354 9717 FAX: 0312 354 9718

www.ak-grup.com.tr



YANGIN SÖNDÜRME SİS.MÜH.TİC.LTD.ŞTİ.

AK GRUP YANGIN SÖNDÜRME SİSTEMLERİ
FM200 / HFC277ea SÖNDÜRME SİSTEMİ
KATALOĞU



EMNİYETLİ

EKONOMİK

SONUÇ VERİCİ

HIZLI

EFEKTİF

İNSAN SAĞLIĞI İÇİN GÜVENLİ

ÇEVRE DOSTU

*“ Halon 1301 ” alternatifi
Yangın Koruma Sistemlerinde Doğru Seçim
FM-200 / HFC 227 ea*

Yangın Sektöründe 10. Yıl

AK Grup, geleceğinizi güven altına almak, insan hayatını ve yatırımlarınızı korumak için profesyonel, tecrübeli ve dinamik mühendislerimiz ve teknik desteğimiz ile uluslararası ve yerel standartlara uygun, teknolojik, müşteri odaklı hizmet anlayışı ile yangından korunma sistemleri alanında çözümler üreten bir mühendislik ve hizmet firmasıdır.

FM-200 Yangın Söndürme Sistemleri - TS EN 15004



Sistem tüpleri :

Genel kurallar dahilinde, bütün gazlı söndürme sistemleri dizayn edilirken söndürme gazının depolanacağı tüpler, gazın kimyasal özellikleri ve sistemin ihtiyacı olan basınç değerlerini karşılayacak işletme ve test basıncına sahip, dikişli çelik veya dikişsiz çelik çekme tüpler olarak seçilirler.

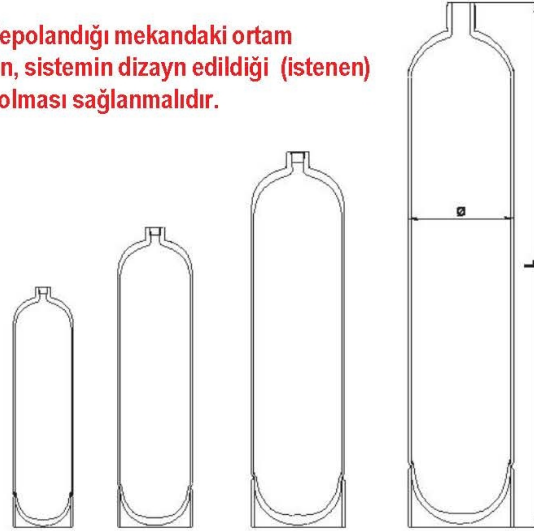
Uygun basınçtaki tüp seçimi yapıldıktan sonra; Yangından korunacak bir hacmi korumak için, seçilen söndürücü gazın söndürme konsantrasyonuna göre yapılacak hesaplama sonucu bulunacak gaz miktarına uygun bir tüp seçilir.

Dünyada, gaz üreten veya sistem üreten hiçbir üretici tüp üreticisi değildir. Sistem üreticileri tercihen seçtikleri tüp üreticilerinin ürünlerini kullanmaktadırlar.

Gazlı söndürme sistemlerinin çalışma basınçları ise 25-26 bar veya 42 dır. Bu basınçlarda içlerine gaz depolanacak tüplerin test basınçları çalışma basıncının 1.5 katı olmak zorundadır

Dizayn edilen bir söndürme sisteminde; Gerekli gaz miktarı bulunduktan sonra, borulama tesisatı projelendirilmeli ve borulama detayı ile nozul sayısı belirlendikten sonra yapılacak hidrolik hesaplamalar sonucu, gazın depolanacağı tüp hacmi seçilmelidir. Seçilen tüp içindeki gazın basıncı ile, yapılan gaz dağıtımı borulama tesisatından gazın istenen sürede ve istenen konsantrasyonda hacme boşalıp boşalmayacağı kontrol edilmelidir. Tüplerde çeşitli onaylar istenebilir, ancak Avrupa Ülkeleri ve Türkiye’de kanunen geçerli olan **2010/35/AB TPED** Basıncılı ekipmanlar direktiflerine uygunluk ve “Pi” işareti kesinlikle aranmalıdır. Aksi halde söz konusu tüplerin Türkiye’ye ithali, alımı, satımı ve kullanımı kanunen yasaktır.

Tüplerin depolandığı mekandaki ortam sıcaklığının, sistemin dizayn edildiği (istenen) sıcaklıkta olması sağlanmalıdır.

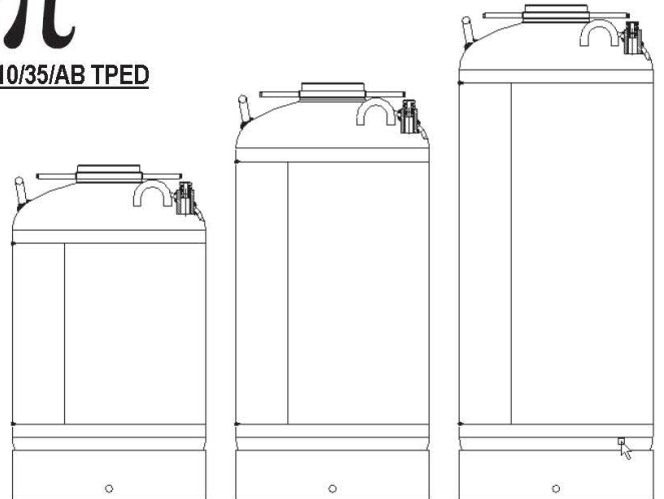


2010/35/AB TPED Onaylı Çelik Çekme Tüpler

Çelik Çekme Silindir Ölçüleri ~			
Hacim V	Çap Ø	Yükseklik mm	Ağırlık kg
14 lt	204	630	22.6
27 lt	204	1066	36.3
27 lt	229	888	33.0
50 lt	229	1533	58.3
50 lt	267	1245	77.6
52 lt Dikişli	254	1248	47
67 lt	267	1585	101.4
80 lt	267	1744	116
80 lt Dikişli	405	836	71.7
120 lt	267	2000	145

π

2010/35/AB TPED



2010/35/AB TPED Onaylı Dikişli Tüpler

Dikişli Silindir Ölçüleri ~			
Hacim V	Çap Ø	Yükseklik mm	Ağırlık kg
80 lt	405	817	71.7
106 lt	405	1020	85.5
120 lt	405	1152	97.5
147 lt	405	1407	118.0
200 lt	510	1230	165.9
250 lt	510	1497	198.5

FM-200 Yangın Söndürme Sistemleri - TS EN 15004





Industrie Service

ZERTIFIKAT

Certificate

Baumusterzulassung nach ADR/RID / Type approval according to ADR/RID

Zertifikat-Nr.: **0036-044-15 Rev. 0**
Certificate No.:

Gültigkeit / Validity: 2015-06-24 - 2025-06-23

Name und Anschrift des Antragstellers: Beijing Tianhai Industry Co. Ltd.
Name and Postal Address of Applicant: No. 9 Tianying North Road, Chao Yang District,
Beijing 100121, P.R. China

Hiermit wird bescheinigt, dass der unten spezifizierte Typ die technischen Anforderungen des ADR/RID 2015 und der Richtlinie 2010/35/EU (TPED) erfüllt. / We herewith certify that the type specified below meets the technical requirements of ADR/RID 2015 and the directive 2010/35/EU (TPED).

Prüfbericht Nr.: P-PRC-11-01-600275-018 von / of 2011-01-26
Test Report No.: E-IS-DDB-MUC-14-01-7900024-001-005, 28-01-2014
TÜV SÜD Industrie Service GmbH

Typ, Norm, Zeichnung, Revision, Datum Druckfass / Pressure Drum **EN 14208:2004**
Type, Standard, Drawing, Revision, Date EN450-500-00B, Rev. 0.0, 2015-3-20
(Anlage / Enclosure)
Beschreibung siehe Anhang
Description see annex

Fertigungsstätte Beijing Tianhai Industry Co. Ltd.
Manufacturing Plant Mulin Town, Shunyi District,
Beijing 101300, P.R. China

Hinweis: Zweite Version zur Korrektur der fehlerhaften Angabe zur Gültigkeit
Remark: Second version of certificate in order to correct a failure in the indication of the validity

(Ort, Datum)
(Location, Date)

München, 2016-07-22

TÜV SÜD Industrie Service GmbH
Dampf- und Drucktechnik
Westendstraße 199
D-80686 München
Tel.: +49 (0) 89 / 5791-1891
Fax: +49 (0) 89 / 5791-1810
www.tuev-sued.de



TÜV SÜD Industrie Service GmbH
Inspection Body Xa / Notified Body 0036

Klaus J. Meier



Deutsche
Akkreditierungsstelle
D-IS-14153-02-03



Industrie Service

Zertifikat / Certificate**0036-044-15 Rev. 0****Anhang 1: Beschreibung des zertifizierten ortsbeweglichen Druckgeräts****Annex 1: Description of certified transportable pressure equipment**

Typ nach Norm / Type acc. standard:	Druckfass / Pressure drum, EN 14208:2004
Hersteller / Manufacturer:	Beijing Tianhai Industry Co. Ltd. Mulin Town, Shunyi District, Beijing 101300, P.R. China
Zeichnungen / Drawings:	EN450-500-00B, Rev. 0.0, 2015-3-20
Wesentliche Merkmale / Relevant Data	$p_h = 61 \text{ bar}$ $D_0 = 462 \text{ mm}$ $a_1 = 5,1 \text{ mm}$ (rechnerische Mindestwanddicke / (calculated minimum wall thickness) $a_2 = 2,5 \text{ mm}$ (Mindestwanddicke für Handhabung/ (minimum wall thickness for use) $b_1 = 5,1 \text{ mm}$ (rechnerische Mindestwanddicke / (calculated minimum wall thickness) $V = 240 \text{ L}$ Werkstoff / Material: P355M (1.8821; EN 10028-5:2009)
Ventilanschluß / Valve connection:	3,0"-12UN-2B <u>Anmerkung:</u> Ausrüstungsteile sind nicht Gegenstand dieses Zertifikates und benötigen eine eigene Konformitätsbewertung. <u>Remark:</u> Accessories are not subject of this certificate and require a separate conformity assessment.
Verwendung / Application	Für erstickende Gase, Klasse 2, 2A bis $p_h = 61 \text{ bar}$ For asphixiant Gases, Class 2, 2A up to $p_h = 61 \text{ bar}$



Industrie Service

ZERTIFIKAT

Certificate

Baumusterzulassung nach ADR/RID Type approval according to ADR/RID

Zertifikat-Nr.: **0036-057-12 Rev. 1**
Certificate No.:

Gültigkeit /Validity: 2022-11-21

Name und Anschrift des Antragstellers: Beijing Tianhai Industry Co. Ltd.
Name and Postal Address of Applicant: No. 9 Tianying North Road, Chao Yang District,
Beijing 100121, P.R. China

Hiermit wird bescheinigt, dass der unten spezifizierte Typ die technischen Anforderungen des ADR/RID 2013 und der Richtlinie 2010/35/EU (TPED) erfüllt. / We herewith certify that the type specified below meets the technical requirements of ADR/RID 2013 and the directive 2010/35/EU (TPED).

Prüfbericht Nr.: P-PRC-12-09-600275-238 vom/dated 2012-9-18
Test Report No.: von / of TÜV SÜD Industrie Service GmbH

Typ, Norm, Zeichnung, Revision, Datum
Type, Standard, Drawing, Revision, Date

Flasche / Cylinder **EN 13322-1:2003+A1:2006**
EN324-OOA, Rev. 10, 2012-5-21
EN324-OOA, Rev. 11, 2013-2-26
EN324-OOA, Rev. 12, 2013-2-26
(3 Anlagen / 3 Enclosures)

Fertigungsstätte/
Manufacturing Plant

Beijing Tianhai Industry Co. Ltd.
Mulin Town, Shunyi District,
Beijing 101300, P.R. China

Anmerkung: Cylinder Code "NS" nach EN ISO 11114-1. Die Gasverträglichkeit wurde nicht überprüft.
Remark: Cylinder code "NS" according EN ISO 11114-1. The gas compatibility was not checked.

(Ort, Datum)
(Location, Date)

München, 2013-04-24



TÜV SÜD Industrie Service GmbH
Inspection Body Xa / Notified Body 0036

Klaus J. Meier

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Deutsche
Akkreditierungsstelle
D-IS-14153-02-03

Anlage 3/3 zum Zertifikat



AK GRUP YANGIN SÖNDÜRME SİS. MÜH. TİC. LTD. ŞTİ.

2. FM200 Gazlı Söndürme Sistemi Vana Ve Aksesuarları Katalog Ve Sertifikaları



AK GRUP YANGIN SÖNDÜRME SİSTEMLERİ MEKANİK TESİSAT MÜHENDİSLİK SANAYİ VE TİC.LTD.ŞTİ.

İvedik Org.San.Bölg. 1468 Cad. No:134 Yenimahalle /ANKARA

TEL: 0312 354 9717 FAX: 0312 354 9718

www.ak-grup.com.tr



CEODEUX
FIRETEC

**Valves for fixed
installations Ø 49mm
for chemical gases**



B
Series
B0481

STANDARD SPECIFICATION

Working pressure p max.

140 bar

Temperature range

- 20°C + 60°C

Seat orifice size

49 mm

Material

Valve body

brass

Inlet connection

C = 3" - 12 UN

Outlet connection

A = 2 1/2" - 12 UN

Burst disc

p = has to be specified

Gauge

has to be specified

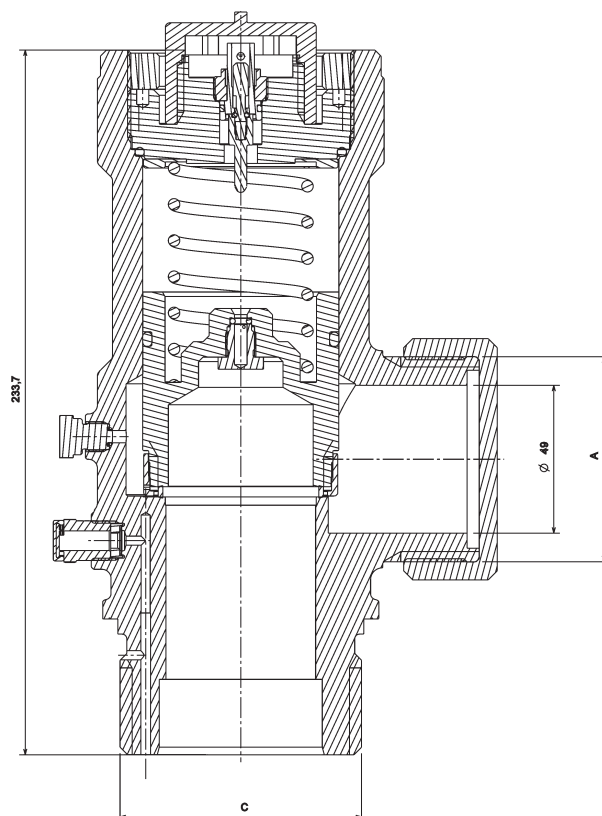
OPTIONS

- Special inlet
- Special outlet
- Gauge
- Gauge with integrated pressure switch
- Pressure switch
- Special burst disc

ORDERING

When ordering, please specify:

- Series number or attribution
- Type of gas
- Connections
- Burst disc pressure "p"
- Thread for dip tube connection "G"
- Options



RELEASE DEVICES

Type	Release device
B04420065	Manual / pneumatic 20 bar
B04420066	Pneumatic 20 bar
B04420076	Pneu. double piston 10 bar
B04425131	Electromagnetic 0,5A
B04420100	Manual release



CEODEUX
FIRETEC

**Valves for fixed
installations Ø 33mm
for chemical gases**



Series

B 0 4 8 2

STANDARD SPECIFICATION

Working pressure p max.	140 bar
Temperature range	- 20°C + 60°C
Seat orifice size	33 mm
Material	
Valve body	brass
Inlet connection	C = 2 1/2" - 12 UN
Outlet connection	A = 1 7/8" - 12 UN
Burst disc	p = has to be specified
Gauge	has to be specified



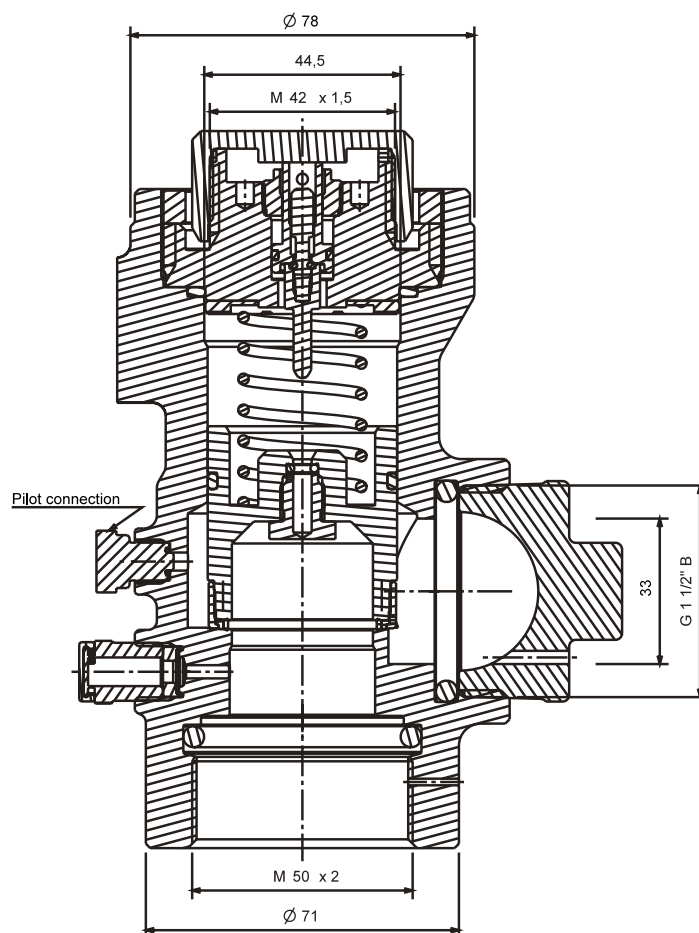
OPTIONS

- Special inlet
- Special outlet
- Gauge
- Gauge with integrated pressure switch
- Pressure switch
- Special burst disc

ORDERING

When ordering, please specify:

- Series number or attribution
- Type of gas
- Connections
- Burst disc pressure "p"
- Thread for dip tube connection "G"
- Options



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RELEASE DEVICES

Type	Release device
B04420065	Manual / pneumatic 20 bar
B04420066	Pneumatic 20 bar
B04420076	Pneu. double piston 10 bar
B04425131	Electromagnetic 0,5A
B04420100	Manual release

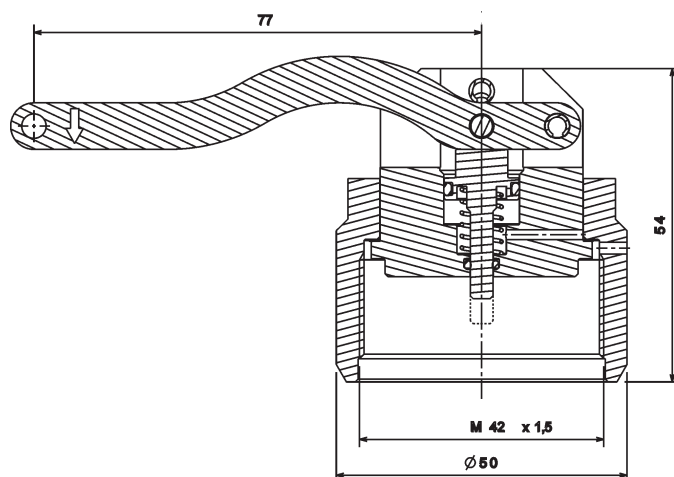


CEODEUX
FIRETEC

**Manual release device
for series
B0480
B0481
B0482**



B
Series
B0442



Anerkennung

von Bauteilen und Systemen

Approval

of Components and Systems



Inhaber der Anerkennung

Holder of the Approval

CEODEUX Extinguisher Valves Technology S.A.

Rotarex Firetec

24, rue de Diekirch

LU-7505 Lintgen

Anerkennungs-Nr.
Approval No.

G 312003

Anzahl der Seiten
No. of pages

21

gültig vom (TT.MM.JJJJ)
valid from (dd.mm.yyyy)

01.09.2015

gültig bis (TT.MM.JJJJ)
valid until (dd.mm.yyyy)

31.08.2019

Gegenstand der Anerkennung

Subject of the Approval

Hochdruck-Behälterventil und Auslöseeinrichtung/

High-pressure container valve and actuator

"B0481xxxx"

"B0482xxxx"

Verwendung

Use

in ortsfesten HFC-227ea- und FK-5-1-12-

Feuerlöschanlagen

in fixed HFC-227ea- and FK-5-1-12- fire extinguishing systems

Anerkennungsgrundlagen

Basis of the Approval

VdS 2344:2014-07

EN 12094-4:2004

EN 12094-6:2006

Die Anerkennung

umfasst nur das angegebene Bauteil/System in der zur Prüfung eingereichten Ausführung

- mit den Bestandteilen nach Anlage 1,
- dokumentiert in den technischen Unterlagen nach Anlage 2,
- zur Verwendung in den angegebenen Einrichtungen der Brandschutz- und Sicherungstechnik.

Bei der Anwendung des Gegenstandes der Anerkennung sind die Hinweise nach Anlage 3 zu beachten.

Das Zertifikat darf nur unverändert und mit sämtlichen Anlagen vervielfältigt werden. Alle Änderungen der Voraussetzungen für die Anerkennung sind der VdS-Zertifizierungsstelle - mitsamt den erforderlichen Unterlagen - unverzüglich zu übermitteln.

This Approval

is valid only for the specified component/system as submitted for testing

- together with the parts listed in enclosure 1
- documented in the technical documents according to enclosure 2
- for the use in the specified fire protection and security installations.

When using the subject of the approval the notes of enclosure 3 shall be observed.

This certificate may only be reproduced in its present form without any modifications including all enclosures. All changes of the underlying conditions of this approval shall be reported at once to the VdS certification body including the required documentation.

VdS Schadenverhütung GmbH

Zertifizierungsstelle

Amsterdamer Str. 174

D-50735 Köln

Ein Unternehmen des Gesamtverbandes der Deutschen Versicherungswirtschaft e.V. (IGDV), durch die DAkkS akkreditiert als Zertifizierungsstelle für Produkte in den Bereichen Brandschutz und Sicherungstechnik

A company of the German Insurance Association (IGDV) accredited by DAkkS as certification body for fire protection and security products

Köln, den 27.08.2015

Reinermann

Geschäftsführer
Managing Director

ppa. Belling

Leiter der Zertifizierungsstelle
Head of Certification Body



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http://www.apragaz.com
info@apragaz.com



NOTIFIED BODY EC TYPE EXAMINATION CERTIFICATE In accordance with module B of the Pressure Equipment Directive 97/23/EC or the Transportable Pressure Equipment Directive 99/36/EC		Certificate N° 01/LU/149-15-REV 0 Page 1/3
Manufacturer	Name	FIRETEC Ceodeux Fire Extinguishers Valves Technology SA
	Address	Route de Diekirch, 24 - B.P. 19 LU – 7505 Lintgen Grand Duché de Luxembourg
Concerned equipment : <u>VALVES & ACCESSORIES</u> Reference number : See appendix 1		
The manufacturer is allowed to affix the "CE" or "II" mark to approved equipment in the conditions described in the Directives, only if the requirements stated in module D are fully complied with. The approval validity is mentioned in annex 1.		
The undersigned, acting within the scope of its notification for the purpose of the European Council Directive 97/23 EC and 99/36 EC, certifies that the type of these valves & accessories conforms with the requirements of the Pressure Equipment Directive 97/23 EC and the Transportable Pressure Equipment Directive 99/36 EC on the base of the information and samples supplied.		
Date : 09/01/2008 Notified body identification number : 0029	Name : Ch. Leplat APRAGAZ Belgium Inspecting Authority	Position General Manager Signature 
Notified body stamp :		Notified body reference : 0109/P4722/PED01-TPED01

**APRAGAZ**Member of
CEOC
INTERNATIONAL

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**NOTIFIED BODY EC TYPE EXAMINATION CERTIFICATE**

In accordance with module B of the Pressure Equipment
 Directive 97/23/EC

Certificate N°**01/LU/149-15-REV 0****Appendix 1****Page: 2/3****Valves & Accessories (CE Marking)**

<u>Reference number</u>	<u>Gas</u>	<u>Nominal Working Pressure at 20°C</u>	<u>Reference Standard</u>	<u>Approval valid until</u>
B0100/B0101	CO ₂	60 bar	EN 3-6	04/09/2011
B0111/B0112/B0114	CO ₂	60 bar	EN 3-6	04/09/2011
B0121	CO ₂	60 bar	EN 3-6	04/09/2011
B0130/B0131	CO ₂	60 bar	EN 3-6	04/09/2011
B0132	CO ₂	60 bar	EN 3-6	05/09/2017
B0150/B0151/B0152	CO ₂	60 bar	EN 3-6	04/09/2011
B0164	CO ₂	60 bar	EN 3-7	18/01/2012
B0200/B0201/B0202/ B0203	N ₂	20 bar	EN 3-6 EN 3-8	04/09/2011
B0217/B0218/B0230/ B0231/B0241/B0245/ B0251/B0260/B0280	N ₂	20 bar	EN 3-6 EN 3-8	04/09/2011
B0300/B0301/B0302/ B0380	CO ₂ cartridges	25 bar	EN 3-7	18/01/2012
B0320	N ₂	25 bar	EN 3-6 / EN 3-8	18/01/2012
B0330/B0331	CO ₂ cartridges	20 bar	EN 3-6 / EN 3-8	18/01/2012
B0430	CO ₂ , Inert gases	60 bar, 200 bar	EN ISO 10297	04/09/2011
B0431	CO ₂ , Inert gases	60 bar, 200 bar	EN ISO 10297	04/09/2011
B0435	CO ₂ , Inert gases	60 bar, 200 bar	EN ISO 10297	04/09/2007
B0437	CO ₂	60 bar	EN ISO 10297	04/09/2011
B0439	CO ₂ , Inert gases	60 bar, 200 bar	EN ISO 10297	04/09/2011
B0455/B0456	CO ₂	60 bar	EN ISO 10297	15/06/2012
B0457	Ar, N ₂ , Inergen 52.8.40	200 bar	EN ISO 10297	30/07/2012
B0459	HFC227ea (FM200) HFC23-Trigon- (Trifluoromethane)	42 bar	EN ISO 10297	19/07/2014
B0467/B0468	FS 49C2 (HFC 3-4-9 C2)	42 bar	EN ISO 10297	04/09/2011
B04690000	NOVEC 1230 HFC227ea (FM200)	42 bar	EN ISO 10297	09/07/2013
B04690100	NOVEC 1230 HFC227ea (FM200)	42 bar	EN ISO 10297 EN 12094-4	11/01/2012
B0480	CO ₂ , Inert gases HFC227ea (FM200)	60 bar - 300 bar 42 bar	EN ISO 10297 EN 12094-4	18/09/2017
B 0481	Heptafluoropropane (FM 200), Trifluoromethane (FE13), Nanofluor-4-(trifluormethyl)- 3-pentanone (NOVEC 1230)	Max. 50 bar	EN 12094	29/10/2017
B0482	HFC227ea (FM200) NOVEC 1230 CHF3 (FE13)	50 bar	EN 12094-4	07/09/2017
B0700/B0704	Powder, water, foam, halon alternatives	18 bar	EN 3-6 EN ISO 10297	15/03/2012
B0701	Powder, water, foam, halon alternatives	18 bar	EN 3-6 EN ISO 10297	11/06/2012
B0702	CO ₂ , Inert gases	60 bar - 200 bar	EN 3-6	15/03/2012
B0703	CO ₂ , Inert gases	60 bar - 200 bar	EN ISO 10297 TRG 253	15/03/2012
B0801 (For PBK use only)	Water + 5,55% Class A additive + 3% AFFF	300 bar	EN 3-6	01/11/2015

Date : 09/01/2008

Name : Ch. Leplat

Position

General ManagerNotified body identification
number :**0029**

Signature

Notified body stamp :

APRAGAZ
 Belgium
 Inspecting
 Authority

Notified body reference :

0109/P4722/PED01-TPED01



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NOTIFIED BODY EC TYPE EXAMINATION CERTIFICATE
In accordance with module B of the Transportable Pressure
Equipment Directive 99/36/EC

Certificate N°
01/LU/149-15-REV 0
Appendix 1
Page: 3/3

Valves & Accessories (II Marking)

<u>Reference number</u>	<u>Gas</u>	<u>Nominal Working Pressure at 20°C</u>	<u>Reference Standard</u>	<u>Approval valid until</u>
B0170	CO ₂ , Various test gases	60 bar, 200 bar	EN ISO 10297	04/09/2011
B0171	CO ₂	60 bar	EN ISO 10297	04/09/2011
B0172	CO ₂	60 bar	EN ISO 10297	04/09/2011
B0174	CO ₂	60 bar	EN ISO 10297	10/01/2013
B0175	O ₂	150 bar - 200 bar	EN ISO 10297	18/01/2012
B0176	Air and mixture CO ₂ + N ₂	300 bar	EN ISO 10297	29/11/2013
B0177	CO ₂	60 bar	EN ISO 10297	30/03/2014
B0842	Air	200 bar - 300 bar	EN ISO 10297 EN ISO 2503	05/08/2015

Date : 09/01/2008

Name : Ch. Leplat

Position **General Manager**

Notified body
identification number :

0029

Signature

Notified body stamp :

APRAGAZ
Belgium
Inspecting
Authority



Notified body reference :

0109/P4722/PED01-TPED01



AK GRUP YANGIN SÖNDÜRME SİS. MÜH. TİC. LTD. ŞTİ.

3. FM200 Gazlı Söndürme Sistemi Manometre Katalog Ve Sertifikaları



AK GRUP YANGIN SÖNDÜRME SİSTEMLERİ MEKANİK TESİSAT MÜHENDİSLİK SANAYİ VE TİC.LTD.ŞTİ.

İvedik Org.San.Bölg. 1468 Cad. No:134 Yenimahalle /ANKARA

TEL: 0312 354 9717 FAX: 0312 354 9718

www.ak-grup.com.tr

Pressure gauge models 1 and 213 per directive 94/9/EC (ATEX)

II 2 GD c TX



Part of your business

1. Safety

2. Description

3. Specifications and intended use

4. Commissioning

5. Maintenance and cleaning

Appendix 1: Declaration of conformity for models 111.xx, 113.53, 213.40 and 213.53

Declarations of conformity see www.wika.com
Specifications: see data sheet on www.wika.com
Subject to technical modifications.
© 2011 WIKA Alexander Wiegand SE & Co. KG

WIK A Alexander Wiegand SE & Co. KG
Alexander-Wiegand-Straße 30
63911 Klingenberg • Germany
Tel. (+49) 9372/132-0
Fax (+49) 9372/132-406
E-Mail info@wika.de
www.wika.de

1. Safety



WARNING!

Before installation, commissioning and operation, ensure that the appropriate pressure gauge has been selected in terms of measuring range, design and specific measuring conditions.

- Check the compatibility with the medium of the materials subjected to pressure!
- In order to guarantee the measuring accuracy and long-term stability specified, the corresponding load limits must be observed.
- Non-observance can result in serious injury and/or damage to the equipment.
- Only qualified persons authorised by the plant manager are permitted to install, maintain and service the pressure gauges.

2. Description

- Nominal sizes

Model 111.10:	NS 40, 50, 63, 80, 100, 160	Model 113.53:	NS 40, 80, 100
Model 111.11/16:	NS 40, 50, 63	Model 213.40:	NS 63, 80
Model 111.12:	NS 40, 50, 63, 80, 100	Model 213.53:	NS 50, 63
- The instruments measure the pressure by means of resilient Bourdon tube pressure elements
- The measuring characteristics are in accordance with the EN 837-1 standard

3. Specifications and intended use

Pressure limitation

Steady: 3/4 x full scale value
Fluctuating: 2/3 x full scale value
Short time: Full scale value

Mechanical connection

In accordance with the general technical regulations for pressure gauges (e.g. EN 837-2 "Selection and installation recommendations for pressure gauges").

When screwing gauges in, the force required for this must not be applied through the case, but rather through the spanner flats (using a suitable tool) provided for this purpose on the square shaft of standard connections.

Installation with
open-ended
spanner



Correct sealing of pressure gauge connections with parallel threads ① must be made using suitable flat gaskets, sealing rings or WIKA profile sealings. The sealing of tapered threads (e.g. NPT threads) is made by providing the thread ② with additional sealing material such as, for example, PTFE tape (EN 837-2).



The torque depends on the seal used. Connecting the gauge using a clamp socket or a union nut is recommended, so that it is easier to orientate the gauge correctly.

When a blow-out device is fitted to a pressure gauge, it must be protected against being blocked by debris and dirt.

After mounting, set the compensating valve (if available) from CLOSE to OPEN.



Temperature effect

When the temperature of the measuring system deviates from the reference temperature (+20 °C):

max. ±0.4%/10 K of full scale value

Ingress protection per EN 60529 / IEC 529

Model 111.xx: IP 42

Models 113.53, 213.40 and 213.53: IP 65

Permissible temperatures

Ambient:

Model 111.xx: -40 ... +60 °C

Models 113.53, 213.40 and 213.53: -20 ... +60 °C

Medium: max. +60 °C

Attention! With gaseous substances, the temperature may increase as a result of compression warming. In these cases it may be necessary to throttle the rate of change of pressure or reduce the permissible medium temperature.

The effective maximum surface temperature is not only dependant upon these instruments, but mainly on the respective medium temperature!

Materials

Wetted parts: Cu-alloy

Movement: Cu-alloy

Dial: NS 40, 50, 63: Plastic
NS 80, 100, 160: Aluminium

Pointer: Plastic (NS 160: Aluminium)

Case: Models 111.10, 111.12, 111.16: Plastic
Model 111.11: Steel
Models 113.53, 213.53: Stainless steel
Model 213.40: Forged brass

Window: Plastic (NS 160: Instrument glass)

Installation

- Nominal position per EN 837-1 / 9.6.7 Figure 9: 90° (⊥)
- Process connection lower mount (LM) or back mount (BM)
- In order to avoid any additional heating, the instruments must not be exposed to direct solar irradiation while in operation!
- Pressure gauges must be earthed via the process connection!

Permissible ambient and operating temperatures

When mounting the pressure gauge it must be ensured that, taking into consideration the influence of convection and heat radiation, no deviation above or below the permissible ambient and medium temperatures can occur. The influence of temperature on the indication accuracy must be observed.

Anerkennung

von Bauteilen und Systemen

Approval

of Components and Systems



Inhaber der Anerkennung

Holder of the Approval

WIKa Alexander Wiegand SE & Co. KG
Alexander-Wiegand-Straße 30
63911 Klingenberg

Die Anerkennung

umfasst nur das angegebene Bauteil/System in der zur Prüfung eingereichten Ausführung

- mit den Bestandteilen nach Anlage 1,
- dokumentiert in den technischen Unterlagen nach Anlage 2,
- zur Verwendung in den angegebenen Einrichtungen der Brandschutz- und Sicherungstechnik.

Bei der Anwendung des Gegenstandes der Anerkennung sind die Hinweise nach Anlage 3 zu beachten.

Das Zertifikat darf nur unverändert und mit sämtlichen Anlagen vervielfältigt werden. Alle Änderungen der Voraussetzungen für die Anerkennung sind der VdS-Zertifizierungsstelle – mitsamt den erforderlichen Unterlagen – unverzüglich zu übermitteln.

This Approval

is valid only for the specified component/system as submitted for testing

- together with the parts listed in enclosure 1
- documented in the technical documents according to enclosure 2
- for the use in the specified fire protection and security installations.

When using the subject of the approval the notes of enclosure 3 shall be observed.

This certificate may only be reproduced in its present form without any modifications including all enclosures. All changes of the underlying conditions of this approval shall be reported at once to the VdS certification body including the required documentation.

VdS Schadenverhütung GmbH
Zertifizierungsstelle
Amsterdamer Str. 174
D-50735 Köln

Ein Unternehmen des Gesamtverbandes der Deutschen Versicherungswirtschaft e.V. (GDV), akkreditiert als Zertifizierungsstelle für die Bereiche Brandschutz und Sicherungstechnik von der Deutschen Akkreditierungsstelle Technik (DATech)

A company of the German Insurance Association (GDV) accredited by "Deutsche Akkreditierungsstelle Technik (DATech)" as a certification body for fire protection and security

Anerkennungs-Nr. Approval No.	Anzahl der Seiten No. of pages	gültig vom (TT.MM.JJJJ) valid from (dd.mm.yyyy)	gültig bis (TT.MM.JJJJ) valid until (dd.mm.yyyy)
G 308005	6	09.08.2016	08.08.2020

Gegenstand der Anerkennung

Subject of the Approval

Manometer/ Pressure gauge
"111.12.040"

Verwendung

Use

in ortsfesten Gas-Hochdruck-Feuerlöschanlagen
gemäß Anlage 3

in fixed gas high pressure fire extinguishing systems
according to Annex 3

Anerkennungsgrundlagen

Basis of the Approval

VdS 2344:2005-12
EN 12094-10:2003-09

Köln, den 09.08.2016

Reinermann

Geschäftsführer
Managing Director

Wilms-Vahrenhorst

Leiter der Zertifizierungsstelle
Head of Certification Body



AK GRUP YANGIN SÖNDÜRME SİS. MÜH. TİC. LTD. ŞTİ.

4. FM200 Gazlı Söndürme Sistemi Nozul Katalog Ve Sertifikaları



AK GRUP YANGIN SÖNDÜRME SİSTEMLERİ MEKANİK TESİSAT MÜHENDİSLİK SANAYİ VE TİC.LTD.ŞTİ.

İvedik Org.San.Bölg. 1468 Cad. No:139 Yenimahalle /ANKARA

TEL: 0312 354 9717 FAX: 0312 354 9718

www.ak-grup.com.tr

NOZZLES FOR HFC-227 EA

Pre-bored and preassembled discharge nozzles for HFC 227 ea fire suppression systems

KEY FEATURES

- Available in 360° or 180° versions
- Solid Brass
- Max working pressure: 100 bar

360°



Product codes	
1/2"	B04612000
3/4"	B04612100
1"	B04612200
1 1/4"	B04612300
1 1/2"	B04612400
2"	B04612500

2 According to the Pressure Equipment Directive (97/23/EC)

180°



Product codes	
1/2"	B04612001
3/4"	B04612101
1"	B04612201
1 1/4"	B04612301
1 1/2"	B04612401
2"	B04612501

2 According to the Pressure Equipment Directive (97/23/EC)

Anerkennung

von Bauteilen und Systemen

Approval

of Components and Systems



Inhaber der Anerkennung

Holder of the Approval

CEODEUX Extinguisher Valves Technology S.A.

Rotarex Firetec

24, rue de Diekirch

LU-7505 Lintgen

Die Anerkennung

umfasst nur das angegebene Bauteil/System in der zur Prüfung eingereichten Ausführung

- mit den Bestandteilen nach Anlage 1,
- dokumentiert in den technischen Unterlagen nach Anlage 2,
- zur Verwendung in den angegebenen Einrichtungen der Brandschutz- und Sicherungstechnik.

Bei der Anwendung des Gegenstandes der Anerkennung sind die Hinweise nach Anlage 3 zu beachten.

Das Zertifikat darf nur unverändert und mit sämtlichen Anlagen vervielfältigt werden. Alle Änderungen der Voraussetzungen für die Anerkennung sind der VdS-Zertifizierungsstelle – mitsamt den erforderlichen Unterlagen – unverzüglich zu übermitteln.

This Approval

is valid only for the specified component/system as submitted for testing

- together with the parts listed in enclosure 1
- documented in the technical documents according to enclosure 2
- for the use in the specified fire protection and security installations.

When using the subject of the approval the notes of enclosure 3 shall be observed.

This certificate may only be reproduced in its present form without any modifications including all enclosures. All changes of the underlying conditions of this approval shall be reported at once to the VdS certification body including the required documentation.

VdS Schadenverhütung GmbH
Zertifizierungsstelle
Amsterdamer Str. 174
D-50735 Köln

Ein Unternehmen des Gesamtverbandes der Deutschen Versicherungswirtschaft e.V. (GDV), durch die DAKKS akkreditiert als Zertifizierungsstelle für Produkte in den Bereichen Brandschutz und Sicherungstechnik

A company of the German Insurance Association (GDV) accredited by DAKKS as certification body for fire protection and security products

Anerkennungs-Nr.

Approval No.

G 315010

Anzahl der Seiten

No. of pages

9

gültig vom (TT.MM.JJJJ)

valid from (dd.mm.yyyy)

14.04.2015

gültig bis (TT.MM.JJJJ)

valid until (dd.mm.yyyy)

13.04.2019

Gegenstand der Anerkennung

Subject of the Approval

Düse/ Nozzle

B0461xxxx

Verwendung

Use

in ortsfesten Inertgas-Hochdruck-Feuerlöschanlagen

in fixed Inertgas high pressure fire extinguishing systems

Anerkennungsgrundlagen

Basis of the Approval

VdS 2344:2014-07

VdS 3179:2014-10

Köln, den 14.04.2015

Reinermann

Geschäftsführer
Managing Director

i. V. Hesels

Leiter der Zertifizierungsstelle
Head of Certification Body



AK GRUP YANGIN SÖNDÜRME SİS. MÜH. TİC. LTD. ŞTİ.

5. FM200 Gaz MSDS Sertifikaları



AK GRUP YANGIN SÖNDÜRME SİSTEMLERİ MEKANİK TESİSAT MÜHENDİSLİK SANAYİ VE TİC.LTD.ŞTİ.

İvedik Org.San.Bölg. 1468 Cad. No:134 Yenimahalle /ANKARA

TEL: 0312 354 9717 FAX: 0312 354 9718

www.ak-grup.com.tr

Shanghai Waysmos Fine Chemical Co., Ltd.
2501 Zhouzhu Road, Nanhui,
Shanghai China, 201322
+86-21-58162351

MATERIAL SAFETY DATA SHEET

HEPTAFLUOROPROPANE

SECTION I " PRODUCT AND DISTRIBUTOR INFORMATION

TRADE NAME / LABEL NAME	[Insert trade name] MH227
CAS NUMBER	431890
CHEMICAL FAMILY	Halogenated alkane; Hydrofluorocarbon
CHEMICAL NAME	1,1,1,2,3,3,3-Heptafluoropropane
SYNONYMS	2H-Heptafluoropropane; HFC-227ea; R-227; FM-200? ; FE-227?
DISTRIBUTOR'S NAME	Shanghai Waysmos Fine Chemical Co., Ltd.
DISTRIBUTOR'S ADDRESS	2501 Zhouzhu Road, Nanhui, Shanghai China, 201322
PHONE	+86-21-58162351
FACSIMILE	+86-21-58162299
DATE OF PREPARATION	SEPT. 24, 2007
PRODUCT USE	Fire/explosion extinguishing, suppression and prevention (inerting) agent for use in total flooding systems or portable extinguishers. THIS PRODUCT IS NOT SUITABLE FOR USE AS AN ACTIVE PHARMACEUTICAL INGREDIENT, PHARMACEUTICAL EXCIPIENT OR DOSAGE AGENT.

SECTION II " COMPOSITION AND INGREDIENT INFORMATION

CHEMICAL NAME	1,1,1,2,3,3,3-Heptafluoropropane
CAS Number	431890
% w/w	> 99.9
OSHA PEL TWA mg/m ³	Not established
OSHA PEL STEL mg/m ³	Not established
OSHA PEL CEIL mg/m ³	Not established
ACGIH TLV TWA mg/m ³	Not established
ACGIH TLV STEL mg/m ³	Not established
ACGIH TLV CEIL mg/m ³	Not established
TOXICITY DATA	N/A

[Remainder of page intentionally blank.]

SECTION III " PHYSICAL AND CHEMICAL CHARACTERISTICS

GENERAL	Colorless, odorless gas
BOILING POINT	-16.4°C / 3°F
VAPOR PRESSURE (@ 21°C / 70°F)	58.8 psia
VAPOR DENSITY (AIR =1)	6.04
WATER REACTIVE	NO
SPECIFIC GRAVITY (H ₂ O =1)	1.46
PERCENT VOLATILE (by volume)	N/A
EVAPORATION RATE (Butyl acetate = 1)	N/A
VISCOSITY (@ 20°C / 68°F)	N/A
MELTING POINT	-131°C / -204°F
WATER SOLUBILITY (v/v @ 20°C / 68°F)	260 mg/L

SECTION IV " FIRE AND EXPLOSION HAZARDS

FLASH POINT	N/A
FLAMMABLE LIMIT (in air; % by volume)	N/A
AUTO-IGNITION TEMPERATURE	N/A
EXTINGUISHING MEDIA	All are suitable. While product is non-flammable and extinguishes fires at sufficient concentration, can undergo thermal decomposition if involved in fires where quantity of product is insufficient to extinguish. Thermal decomposition products may be toxic or corrosive.
UNUSUAL FIRE AND EXPLOSION HAZARDS	Container rupture possible if pressure and temperature relief valves should fail.
SPECIAL FIRE FIGHTING PROCEDURES	Employ water spray from a safe distance to prevent container rupture. If containers should rupture, use self contained breathing apparatus. Product is non-flammable, but denser than air, posing asphyxiation risk. Thoroughly ventilate affected area to remove product and any decomposition products before allowing re-entry.

SECTION V " REACTIVITY DATA

STABILITY	Stable
CONDITIONS TO AVOID	N/A
HAZARDOUS POLYMERIZATION	N/A
INCOMPATIBLE MATERIALS	Powdered metals such as aluminum, magnesium or zinc; strong alkaline agents; oxidizing agents; reducing agents.
HAZARDOUS DECOMPOSITION PRODUCTS	Thermal decomposition products may include hydrogen fluoride, carbon monoxide and carbon dioxide.

SECTION VI " HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE	N/A
POTENTIAL EXPOSURE ROUTES	Inhalation " Yes Eye contact " Yes Skin contact - Yes Ingestion " No
SIGNS AND SYMPTOMS OF OVEREXPOSURE	Inhalation of excessive concentrations in air may induce symptoms of hypoxia (headache, nausea, dizziness, loss of consciousness) or cardiac sensitization (irregular pulse or arrhythmia). Product is a cryogenic gas. Direct skin contact at point of release may cause symptoms of frostbite due to evaporative cooling (cold, white, discolored skin that, in severe cases, may exhibit blistering).
MEDICAL CONDITIONS POTENTIALLY AGGRAVATED BY EXPOSURE	Pre-existing cardiac, respiratory or CNS disorders may be exacerbated by

	overexposure. Epinephrine or sympathomimetic drugs may increase susceptibility to cardiac irregularities upon overexposure.
CARCINOGENICITY	NTP Program " No IARC Monographs " No OSHA " No ACGIH " No Other " No
MUTAGENICITY	S. typhimurium assay " No Mouse lymphoma assay " No Mouse micronuclei assay " No
LC ₅₀	> c. 800,000 ppm
EMERGENCY AND FIRST AID PROCEDURES	Inhalation " Move to fresh air. Artificial respiration if not breathing. Administer oxygen if breathing is labored. Seek medical attention. Eye contact " Flush/irrigate with fresh water. Seek medical attention. Skin contact " Flush/irrigate (spray) with water. Apply sterile dressing as necessary.. Seek medical treatment for symptoms of frostbite. Ingestion " N/A NOTE TO PHYSICIANS: In treating cases of overexposure through inhalation, use of epinephrine, sympathomimetics or other stimulants is contraindicated as such compounds increase susceptibility to cardiac sensitization (irregular pulse or arrhythmia).

SECTION VII " SPILL/LEAK PROCEDURES AND SPECIAL PRECAUTIONS

HANDLING AND STORAGE PRECAUTIONS	Store in a cool, dry, well-ventilated area separate from incompatible materials. Protect containers from mechanical damage. Follow fire equipment manufacturer's instructions for operation, inspection, maintenance and repair of portable extinguishers and fixed extinguishing systems.
OTHER PRECAUTIONS	Prohibit backfeed into containers.
RELEASE OR SPILL PROCEDURES	Evacuate and ventilate the affected area. Prohibit general entry into areas where high concentrations may exist, particularly confined or poorly ventilated areas. Keep in mind that this product is denser than air and that concentrations will be higher at lower levels (sewers, basements or pits). Trained personnel should use self-contained breathing apparatus when entering areas where high concentrations may exist.
WASTE DISPOSAL	Product can be reclaimed unless contaminated. Contact distributor to arrange reclamation. Otherwise, disposal should be in accordance with applicable law, generally by incineration at a qualified facility with an appropriate scrubber and other emission control technology.

SECTION VIII " SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION	NIOSH/MSHA approved self-contained breathing apparatus for entry into areas where high concentrations may exist.
VENTILATION	Passive ventilation (windows, doors, etc.) generally adequate for small areas. Mechanical ventilation for control of large areas and storage or filling facilities.
DERMAL PROTECTION	Lined, neoprene gloves for handling liquid product.
EYE PROTECTION	Shatterproof chemical splash goggles when handling liquid or working on pressurized containers.
OTHER PROTECTIVE EQUIPMENT	Clothing to minimize contact with liquid product or at potential points of release.
OTHER PROTECTIVE PRACTICES	Employ prudent confined space entry and related procedures (confirm equipment is free of product and has been ventilated, etc.). As with all chemical products, wash thoroughly after handling and wash contaminated clothing before re-use.

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS

HEALTH = 1	FLAMMABILITY = 0	REACTIVITY = 0
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HAZARD INDEX:

0 = MINIMAL HAZARD, 1 = SLIGHT HAZARD, 2 = MODERATE HAZARD,
3 = SERIOUS HAZARD AND 4 = SEVERE HAZARD

SHIPPING INFORMATION " U.S. DOT GENERAL

DOT SHIPPING NAME	HEPTAFLUOROPROPANE
DOT ID NUMBER	UN3296
DOT HAZARD CLASS	2.2 NON-FLAMMABLE, COMPRESSED GAS
PACKING GROUP	N/A
PACKAGING INSTRUCTIONS	200
SPECIAL PROVISIONS	T50
NON-BULK PACKAGING	304
PASSENGER AIR/RAIL LIMIT	75 kg/package
AIR CARGO LIMIT	150 kg/package
VESSEL STOWAGE	A
REPORTABLE QUANTITY	None specified
LABEL	NON-FLAMMABLE GAS
PACKAGING EXCEPTIONS	306
BULK PACKAGING	314/315
OTHER STOWAGE	N/A

AIR TRANSPORT " ICAO OR IATA

PROPER SHIPPING NAME	HEPTAFLUOROPROPANE
ID NUMBER	UN3296
HAZARD CLASS	2.2 NON-FLAMMABLE, COMPRESSED GAS
SUBSIDIARY RISK	N/A
PACKING GROUP	N/A
PACKAGING INSTRUCTIONS	200
PACKAGING INSTRUCTIONS " CARGO	200
SPECIAL PROVISIONS	N/A
AIR PASSENGER LIMIT	75 kg/package
AIR CARGO LIMIT	150 kg/package
LABEL	NON-FLAMMABLE GAS

WATER - IMDG

PROPER SHIPPING NAME	HEPTAFLUOROPROPANE
ID NUMBER	UN3296
HAZARD CLASS	2.2 NON-FLAMMABLE, COMPRESSED GAS
SUBSIDIARY RISK	N/A
PACKING GROUP	N/A
MEDICAL/FIRST AID GUIDE	N/A

The foregoing information is provided by Shanghai Waysmos Fine Chemical Co., Ltd. based on available data and is believed to be accurate, but Shanghai Waysmos Fine Chemical Co., Ltd. expressly disclaims all representations and warranties with respect to this information. This information is provided for use by qualified professionals who assume all risks and liabilities arising therefrom.

Clean Extinguishing Agents

The extinguishing agents listed in this section are electrically nonconductive agents that extinguish fires as noted and leave no residue upon evaporation. These agents are listed in National Fire Protection Association: NFPA 2001, Standard on Clean Agent Fire Extinguishing Systems and are accepted by the United States Environmental Protection Agency (EPA) Significant New Alternatives Policy (SNAP) Program, subject to any SNAP "Narrowed Use Limits" and other restrictions.

Jurisdictions **outside** the United States may **not** recognize NFPA and EPA sanction of certain clean agents. Local and national governmental regulations should be consulted **prior** to agent selection.

MH227

Trade Name:	MH227
Chemical Identification:	1,1,1,2,3,3,3-heptafluoropropane
Designation:	HFC-227ea
Minimum Extinguishing Concentrations:	Class A – 5.8% Class B – 6.7%
ALC:	>80%
NOAEL:	9.00%
LOAEL:	10.50%
Uses:	For use in FM Approved fire extinguishing systems that have been tested expressly for use with HFC-227ea agent. Class A (surface burning only), Class B, and Class C extinguishing capabilities.

Company Name:	Shanghai Waysmos Fine Chemical Co Ltd
Company Address:	6F, 493 Moganshan Rd, Hangzhou, Zhejiang, China 310005
Company Website:	http://www.hfc227ea.com.cn
Listing Country:	China
Agent Type:	HFC-227
Certification Type:	FM Approved



GARZ2.EX6288
Clean Agents for Fire Extinguishers and Extinguishing System Units - Component

[Page Bottom](#)

Clean Agents for Fire Extinguishers and Extinguishing System Units - Component

[See General Information for Clean Agents for Fire Extinguishers and Extinguishing System Units - Component](#)

SHANGHAI WAYSMOS FINE CHEMICAL CO LTD

EX6288

388 LIANGLE RD, LAOGANG TOWN
PUDONG NEW DISTRICT
201322 SHANGHAI, CHINA

Types HFC227ea, HFC-125, HFC-236fa.

Marking: Company name or tradename "MH227", type designation and UL Recognized Component Mark.

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