

消防處
牌照及審批總區
香港九龍尖沙咀東康莊道1號5樓
消防總部大廈



FIRE SERVICES DEPARTMENT
LICENSING AND CERTIFICATION COMMAND
5/F, FIRE SERVICES HEADQUARTERS BUILDING,
No.1 Hong Chong Road, Tsim Sha Tsui East,
Kowloon, Hong Kong

本處檔號 Our Ref.: (2) in FP(LC) 314/07 Pt. 8
來函檔號 Your Ref.:
圖文傳真 Fax: 852 - 2723 2197
電話 Tel. No.: 852 - 2733 7619
電郵 Email: lcpolic2@hkfsd.gov.hk

1 December 2017

To: Recipients of FSD Circular Letters

Dear Sir/Madam,

FSD Circular Letter No. 4/2017
Clean Agent Fire Extinguishing Systems

This Circular Letter serves to announce the updated requirements for clean agent fire extinguishing systems.

Subsequent to more stringent controls on ozone depleting agents used for fire extinguishing systems in Hong Kong under the Ozone Layer Protection Ordinance (Cap. 403), some fire extinguishing agents such as HCFC Blend A (NAFS-III), HCFC-123 (FE-232), HCFC-124 (FE-241) and PFB (CEA-410) will cease to be used in new fixed installations and fixed sprayer units while other clean fire extinguishing agents such as “FK-5-1-12 (Novec 1230)” are accepted by this Department.

With a view to reflecting the changes and updating the requirements, relevant pages of Part VIII of FSD Circular Letter No. 4/96 have been revised accordingly. To facilitate Registered Fire Service Installation Contractors to provide suitable marking for the fire extinguishing agents being used in the fire extinguishing systems, basic design requirements of Identification Symbols and Labels have also been revised.

The revised Pages VIII.5 to VIII.9 and Appendices A to E which will replace Pages VIII.5 to VIII.7 and Appendices A to D respectively of Part VIII of FSD Circular Letter No. 4/96 are attached to this Circular Letter for reference.

In view of above, FSD Circular Letter No. 12/97 will become obsolete and this Circular Letter will take effect on 30 May 2018.

Yours faithfully,

(LEUNG Kwun-hong)
for Director of Fire Services

Encl.

- 6.2 All premises protected by CO₂, BCF (*Halon 1211) or BTM (*Halon 1301) fixed installations or sprayer units shall be suitably marked with the appropriate symbol on, or near the entrance door. These symbols are to be of the design, colour and size as shown on the diagram at Appendix A.

7. Halon Modular Systems in Existing Buildings

7.1 Types and Standards

- 7.1.1 BTM (*Halon 1301) modular system shall be installed in accordance with NFPA Standard 12A.
- 7.1.2 BCF (*Halon 1211) modular system shall be installed in accordance with NFPA Standard 12B.

7.2 Approvals

- 7.2.1 All such systems shall be tested and approved by an organization recognized by the Fire Services Department. Enquiries concerning these organizations should be made to the Licensing and Certification Command of this Department.
- 7.2.2 Any ancillary equipment used shall be of the approved type and accepted by this Department.

7.3 Containers

- 7.3.1 Containers should preferably be located outside the protected areas. However, containers may be located within the protected areas when it is possible to do so in the manner that is unlikely to impair system performance when exposed to fire.
- 7.3.2 When containers are located within protected areas or in places where they may not be readily accessible during a fire, provision shall be made for manual control (preferably mechanical) in a readily accessible location outside the protected areas.

8. Clean Agent Fire Extinguishing Systems

<u>Agent Designation</u>	<u>Chemical Name</u>	<u>Common/Trade Name</u>
FK-5-1-12	Dodecafluoro-2-methylpentan-3-one	(*Novec 1230)
HFC-227ea	Heptafluoropropane	(*FM200 / FE-227)
IG-541	Nitrogen, Argon and Carbon Dioxide	(*Inergen)
HFC-23	Trifluoromethane	(*FE-13 / Trigon 300)
HFC-236fa	Hexafluoropropane	(*FE-36)

Besides, other clean agents recognized in NFPA Standard 2001 not containing any "Scheduled Substances" under the Ozone Layer Protection Ordinance (Cap. 403) may also be accepted by this Department.

8.1 Portable Hand-operated Approved Fire Extinguishers for Class 'B' and 'Electric' Fires

Subsequent to dispensing with BCF type portable hand-operated fire extinguishers, the HFC-227ea (*FM200 / FE-227) or HFC-236fa (*FE-36) type portable hand-operated fire extinguisher is accepted as an alternative. The approved portable hand-operated fire extinguishers can be found on the Government Gazette or the FSD website via the following link:-

http://www.hkfsd.gov.hk/eng/accep_eq.html

8.2 Automatically Operated Total Flooding Systems

Clean agents as recognized by NFPA Standard 2001 not containing any "Scheduled Substances" under the Ozone Layer Protection Ordinance (Cap. 403) are acceptable for use in automatic systems which must be designed to comply with NFPA Standard 2001 and have been either approved types or listed products according to Fire Protection Notice No. 15 issued by this Department.

8.3 Fixed Sprayer Units

Subsequent to dispensing with HCFC Blend A (*NAFS-III) and HCFC-124 (*FE-241) fixed sprayer units, the FK-5-1-12 (*Novec 1230) or HFC-227ea (*FM200 / FE-227) type fixed sprayer unit is accepted as an alternative. The approved fixed sprayer units can be found on Government Gazette or the FSD website via the following link:-

http://www.hkfsd.gov.hk/eng/accep_eq.html

Protected volume and particular risk to be protected for each type of approved fixed sprayer unit should be referred to Government Gazette.

8.4 Apart from new buildings, layout plans for both total flooding systems and fixed sprayer units for existing buildings are to be submitted to this Department for consideration prior to installation.

9. Identification Symbols and Labels for Fire Extinguishing Agents

9.1 All premises protected by clean agent fire extinguishing systems (i.e. automatically operated total flooding systems or fixed sprayer units) shall be suitably marked with the appropriate label on or near the entrance door. Labels for clean agent fire extinguishing agents including HFC-227ea (*FM200 / FE-227), IG-541 (*Inergen), HFC-23 (*FE-13 / Trigon 300) and FK-5-1-12 (*Novec 1230) are to be of the design, colour and size as shown on the diagrams at Appendices B, C & E.

9.2 All premises protected by existing HCFC Blend A (*NAFS-III), HCFC-124 (*FE-241) or PFB (*CEA-410) fixed installations or fixed sprayer units shall be suitably marked with the appropriate label on, or near the entrance door. These labels are of the design, colour and size as shown on the diagrams at Appendices B, C and D.

9.3 In case the symbol for existing CO₂ fixed installations or sprayer units should be replaced, the relevant identification label in Appendix B instead of that in Appendix A shall be used.

**Remarks: The use of trade name is for easy identification of fire extinguishing agents commonly used locally only and does not imply that such trade name is the only accepted product for the corresponding fire extinguishing agent. The RFSIC shall check with the manufacturer/authorized supplier to ensure that the correct trade name is used in symbols and other identification labels/notices.*

9.4 The colours and minimum height of lettering for identification symbols and labels are shown in the following tables:

Identification Symbols for Fire Extinguishing Agents

Fire Extinguishing Agents	Lettering	Minimum Height of Lettering	Colour of Lettering	Reference
BCF	BCF	100mm	Black	Appendix A
	溴氯二氟甲烷氣	35mm	Black	
	TOXIC	35mm	Red	
	有毒	35mm	Red	
CO ₂	CO ₂	100mm	Red	Appendix A
BTM	BTM	100mm	Black	Appendix A
	溴代三氟甲烷氣	35mm	Black	
	TOXIC	35mm	Red	
	有毒	35mm	Red	

Identification Labels for Fire Extinguishing Agents

Fire Extinguishing Agents	Lettering	Minimum Height of Lettering	Colour of Lettering	Reference
CO ₂	BEWARE OF SUFFOCATION	15mm	Red	Appendix B
	小心窒息	15mm	Red	
	CO ₂	50mm	Black	
	二氧化碳氣	18mm	Black	
	CAUTION	35mm	Black	
	小心	35mm	Black	
	This area is protected by a CO ₂ fire extinguishing system	10mm	Black	
	此處設有CO ₂ 滅火系統防護	10mm	Black	
	When alarm sounds or upon gas discharge evacuate hazard area immediately 當警鐘響動或氣體發放時，應即撤離現場	10mm	Red	
FM 200	BEWARE OF SUFFOCATION	15mm	Red	Appendix B
	小心窒息	15mm	Red	
	HFP	35mm	Black	
	(FM 200)	18mm	Black	
	七氟丙烷氣	18mm	Black	
	CAUTION	35mm	Black	
	小心	35mm	Black	
	This area is protected by a FM200 fire extinguishing system	10mm	Black	
	此處設有FM200滅火系統防護	10mm	Black	
	When alarm sounds or upon gas discharge evacuate hazard area immediately 當警鐘響動或氣體發放時，應即撤離現場	10mm	Red	
		10mm	Red	

Identification Labels for Fire Extinguishing Agents (Cont'd)

Fire Extinguishing Agents	Lettering	Minimum Height of Lettering	Colour of Lettering	Reference
NAFS-III	BEWARE OF SUFFOCATION	15mm	Red	Appendix C
	小心窒息	15mm	Red	
	HCFC	35mm	Black	
	(NAFS-III)	15mm	Black	
	含氯氟 碳氫化合物	15mm	Black	
	CAUTION	35mm	Black	
	小心	35mm	Black	
	This area is protected by a NAFS-III fire extinguishing system	10mm	Black	
	此處設有NAFS-III滅火系統防護	10mm	Black	
	When alarm sounds or upon gas discharge evacuate hazard area immediately	10mm	Red	
	當警鐘響動或氣體發放時，應即撤離現場	10mm	Red	
Inergen	BEWARE OF SUFFOCATION	15mm	Red	Appendix C
	小心窒息	15mm	Red	
	(N ₂ , Ar, CO ₂)	15mm	Black	
	MIXED GASES	25mm	Black	
	(INERGEN)	15mm	Black	
	混合氣 (氮，氬，二氧化碳)	10mm	Black	
	CAUTION	35mm	Black	
	小心	35mm	Black	
	This area is protected by an INERGEN fire extinguishing system	10mm	Black	
	此處設有INERGEN滅火系統防護	10mm	Black	
	When alarm sounds or upon gas discharge evacuate hazard area immediately	10mm	Red	
	當警鐘響動或氣體發放時，應即撤離現場	10mm	Red	
HCFC-124	BEWARE OF SUFFOCATION	15mm	Red	Appendix D
	小心窒息	15mm	Red	
	HCFC	35mm	Black	
	(HCFC-124)	15mm	Black	
	含氯氟 碳氫化合物	15mm	Black	
	CAUTION	35mm	Black	
	小心	35mm	Black	
	This area is protected by a HCFC-124 fire extinguishing system	10mm	Black	
	此處設有HCFC-124滅火系統防護	10mm	Black	
	When alarm sounds or upon gas discharge evacuate hazard area immediately	10mm	Red	
	當警鐘響動或氣體發放時，應即撤離現場	10mm	Red	

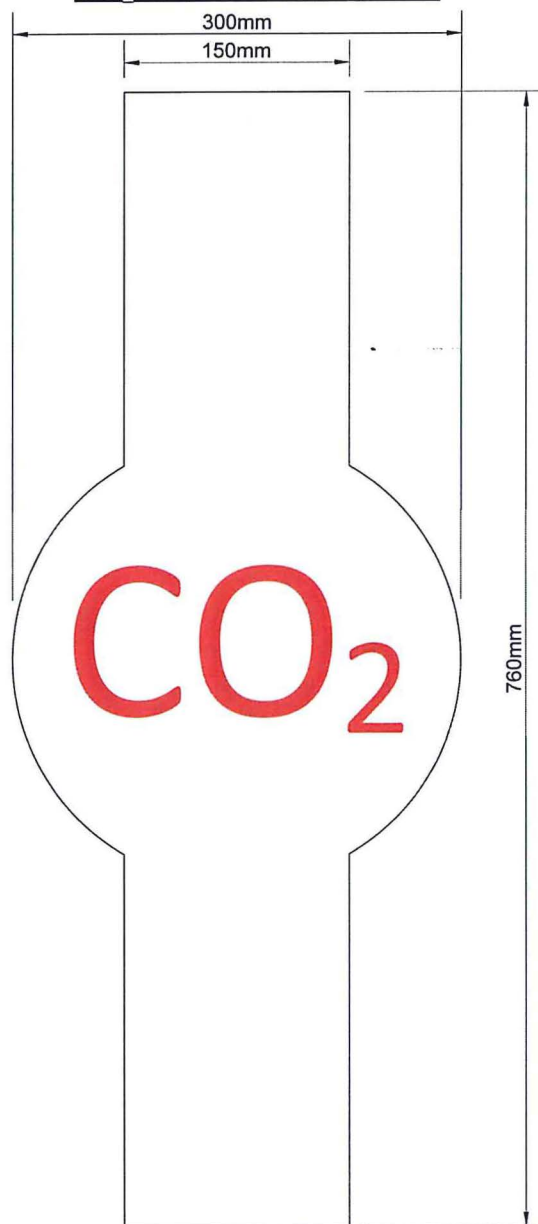
Identification Labels for Fire Extinguishing Agents (Cont'd)

Fire Extinguishing Agents	Lettering	Minimum Height of Lettering	Colour of Lettering	Reference
CEA-410	BEWARE OF SUFFOCATION	15mm	Red	Appendix D
	小心窒息	15mm	Red	
	HCFC	35mm	Black	
	(PFB)	18mm	Black	
	含氟丁烷氣	18mm	Black	
	CAUTION	35mm	Black	
	小心	35mm	Black	
	This area is protected by a CEA-410 fire extinguishing system	10mm	Black	
	此處設有CEA-410滅火系統防護	10mm	Black	
	When alarm sounds or upon gas discharge evacuate hazard area immediately	10mm	Red	
	當警鐘響動或氣體發放時，應即撤離現場	10mm	Red	
CHF ₃	BEWARE OF SUFFOCATION	15mm	Red	Appendix E
	小心窒息	15mm	Red	
	HFC	35mm	Black	
	(CHF ₃)	15mm	Black	
	含氟 碳氫化合物	15mm	Black	
	(三氟甲烷)	10mm	Black	
	CAUTION	35mm	Black	
	小心	35mm	Black	
	This area is protected by a CHF ₃ fire extinguishing system	10mm	Black	
	此處設有三氟甲烷滅火系統防護	10mm	Black	
	When alarm sounds or upon gas discharge evacuate hazard area immediately	10mm	Red	
Novec 1230	BEWARE OF SUFFOCATION	15mm	Red	Appendix E
	小心窒息	15mm	Red	
	Fluoroketone	25mm	Black	
	(NOVEC 1230)	18mm	Black	
	含氟化酮	18mm	Black	
	CAUTION	35mm	Black	
	小心	35mm	Black	
	This area is protected by a Fluoroketone fire extinguishing system	10mm	Black	
	此處設有氟化酮滅火系統防護	10mm	Black	
	When alarm sounds or upon gas discharge evacuate hazard area immediately	10mm	Red	
	當警鐘響動或氣體發放時，應即撤離現場	10mm	Red	

BCF Identification Symbol



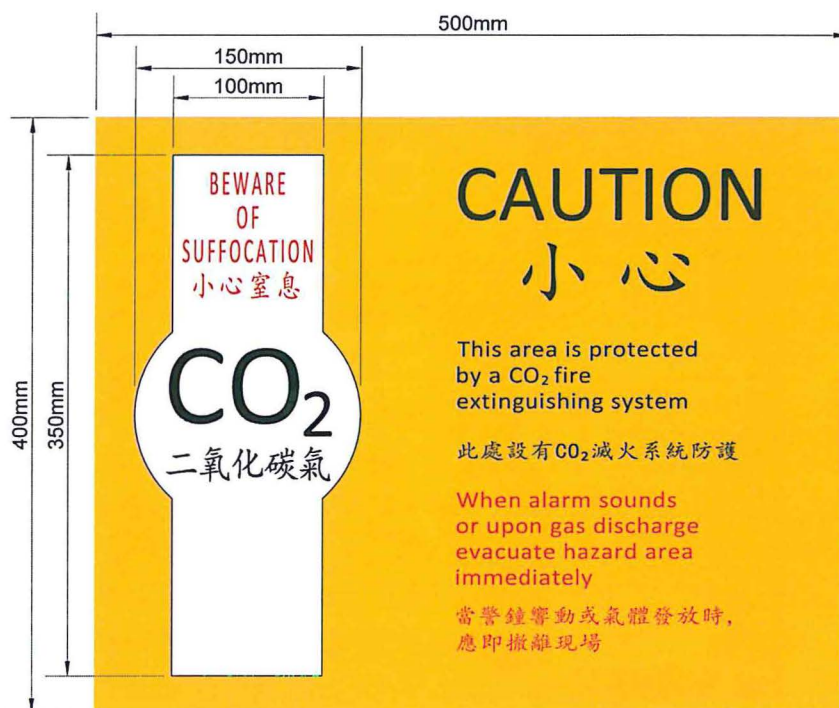
CO₂ Identification Symbol



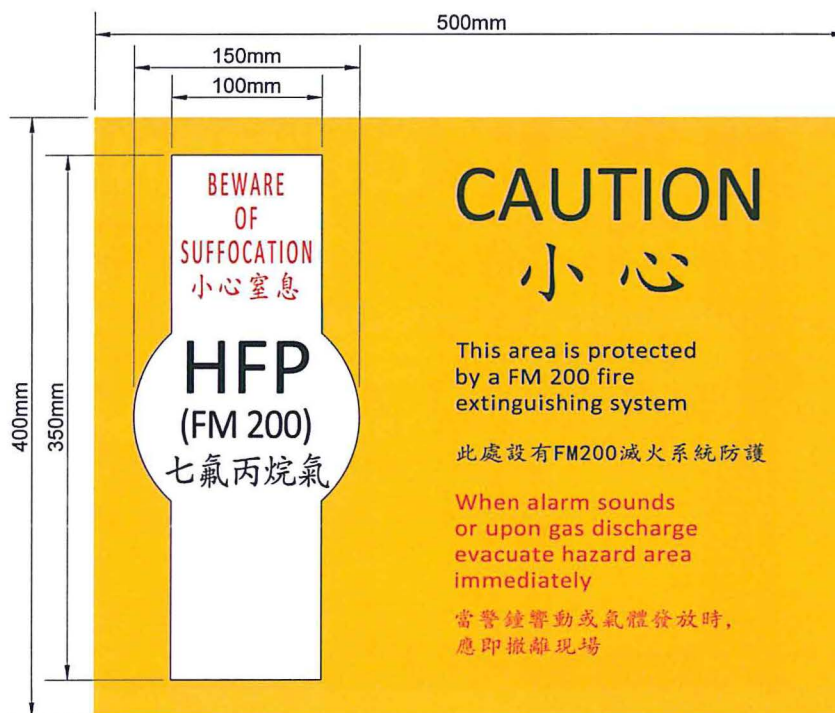
BTM Identification Symbol



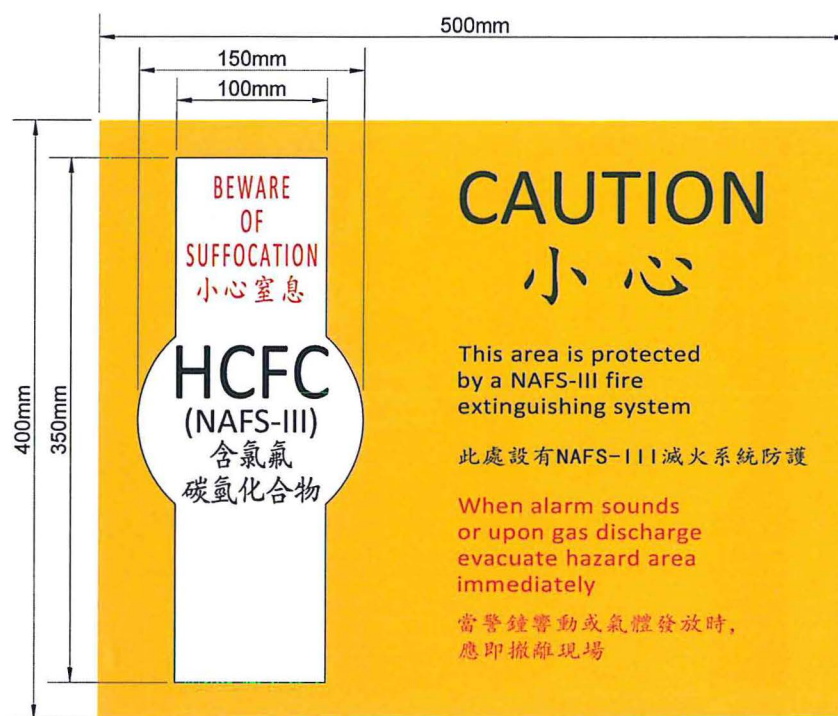
Identification Label for CO₂



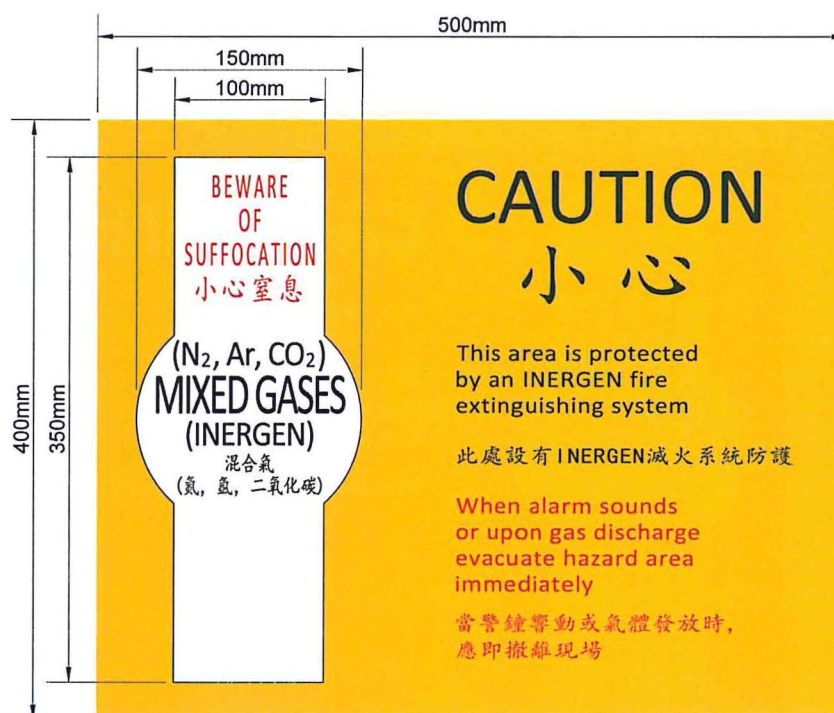
Identification Label for FM200



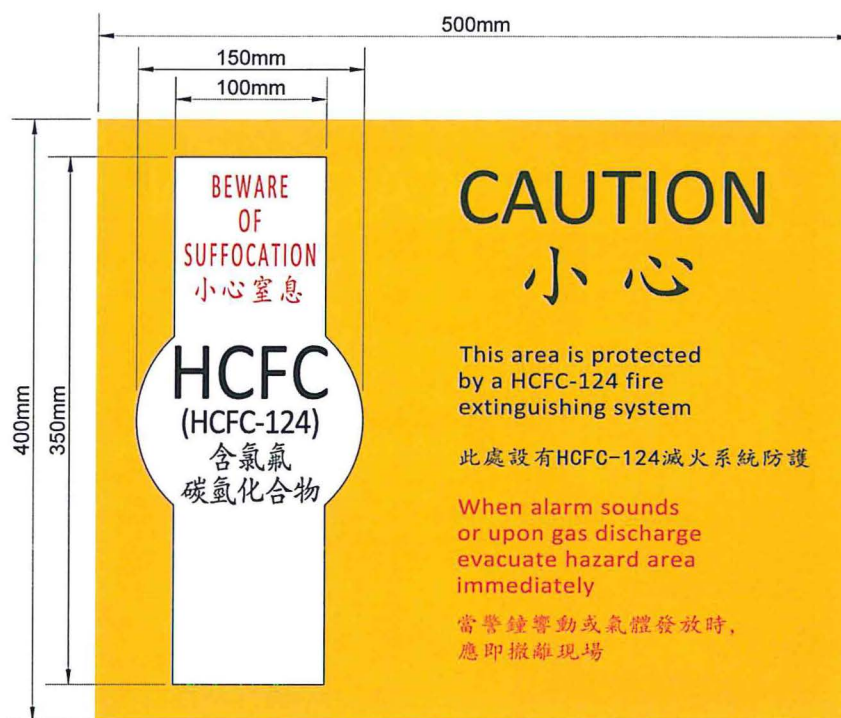
Identification Label for NAFS-III



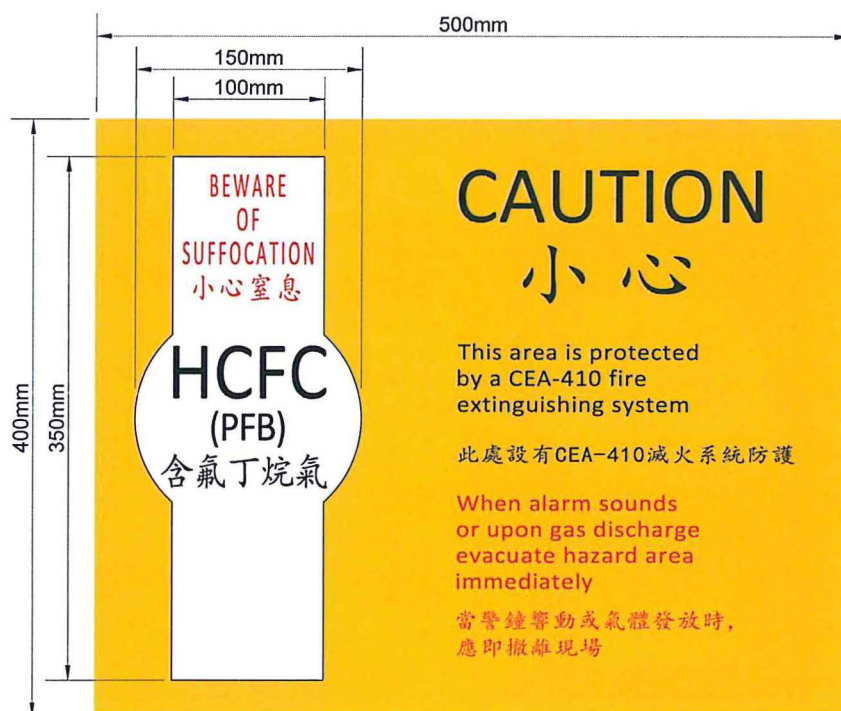
Identification Label for Inergen



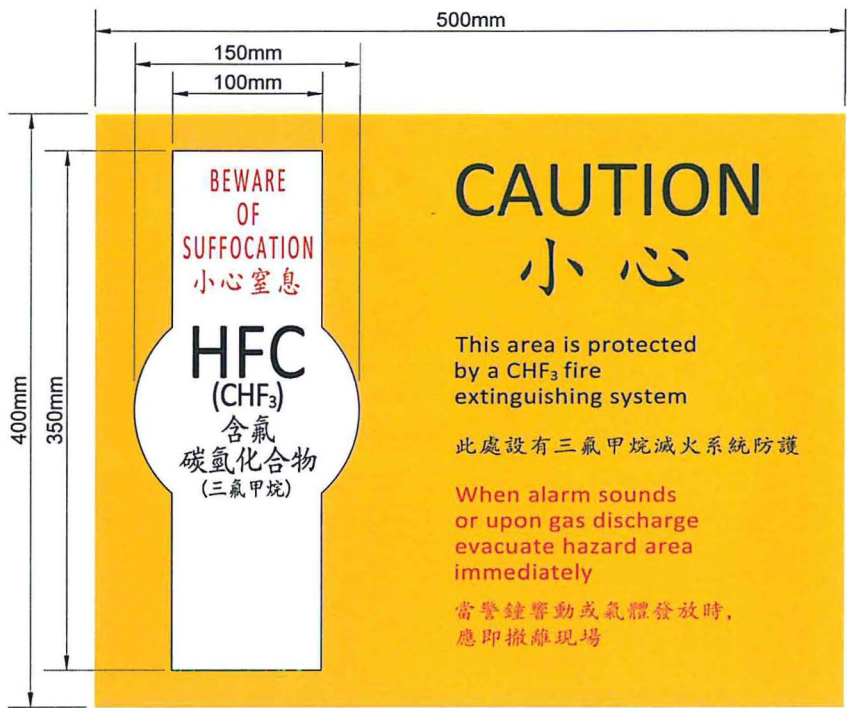
Identification Label for HCFC-124



Identification Label for CEA-410



Identification Label for CHF₃



Identification Label for Novec 1230

