LPG Inert® IG-541

The natural extinguishing agent

Extinguishant IG-541 is a colourless, odourless, electrically non-conductive gas with a density approximately the same as that of air. It is an inert gas mixture consisting nominally of 52% nitrogen, 40% argon and 8% carbon dioxide, with the following mixture specification (based on 8% carbon dioxide with tolerance of ± 5%).

a) Carbon dioxide: range of 7,6 % to 8,4%R

b) Argon: Range of 37,2% to 42,8%

c) Nitrogen: Range of 48,8% to 55,2%

IG-541 extinguishes fires mainly by a reduction of the oxygen concentration in the atmosphere of the hazard enclosure.

In order get the amount of gas needed to effectively protect a risk we will use 39,9% design concentration for both fires class A and class A higher (according to ISO14520-15). This design concentration mean a flooding factor (FF) of 0.348 m^3/m^3 (m^2 of IG-541 for every m^3 of risk).

LPG cylinders can be filled with the amounts obtained from the following table:

IG-541	Filling Density (15ºC)
80L @ 200bar	16.57 m^3
140L @ 200bar	29.00 m^3
80L @ 300bar	22.99 m^3
140L @ 300 bar	40.24 m^3

VdS
Schadenverthutung
Vertraven durch Sischerheit

Agencia Protección Contra Incendios
Ministerio del Interior

Centre National de Prevention et Protetion

VNIIPO
Russian Certification Body

Loss Prevention Certification Board

LPG INERT® IG-541 is stored in high-pressure cylinders in the form of compressed gas, thus space required for such cylinder storage depends on pressure and capacity.

IG-55 fire extinguishing systems are designed for a cylinder filling pressure of 200/300 bar. **LPG** uses cylinders of 80 lt. and 140 lt. capacity, thereby, optimazing in space and cost.

LPG INERT® IG-541 systems can be modular or centralized (single or double row). The system with manual or automatic release includes π (PI) certified bottles, equipped with a pressure gauge valves.

LPG INERT® IG-541 is safe for use in occupied areas and excellent visibility is maintained during discharge. Ideal for the protection of archives, museums, libraries and any other hazard including valuable or unique property. Likewise it is suitable for the protection of computer rooms, telephone exchange equipment and any other electrical installation that may present a fire hazard.

Physical Properties

Chemical name:
Nitrogen/Argon
Chemical formula :
N_2/Ar
Denomination according to ISO 14520 and NFPA 2001:
IG-55
Molecular weight :
33.95
Boiling point at 1.013 bar:
-196º C
Critical temperature:
———
Critical pressure :
———
Maximum filling pressure:
200/300 bar
Design concentration for heptane:
47.5%
Flooding factor for heptane at 20º C :
0.633 m^3/m^3
Design concentration for surface fires class A (ISO):
40.3%
Flooding factor for surface fires class A (ISO):
0.507 m^3/m^3
Design concentration for class A higher fires (ISO):
45.1%
Flooding factor for class A higher fires (ISO):
0.589 m^3/m^3
Design concentration for class A fires (NFPA):
37.2%
Flooding factor for class A fires (NFPA):
0.457 m^3/m^3
NOAEL:
43%
LOAEL:
52%
Maximum concentration in a 5' exposure:
43%
Ozone depletion potential :
0
Greenhouse effect potential :
0

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