Product Certificate
K86591/02 UK

Partner for progress

Issued	2015-07-09
Valid until	2016-07-10
Replaces	K86591/01 UK
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Certificate

DSPA

Non-Pressurized Condensed Aerosol Generators and Components

STATEMENT BY KIWA
With this product certificate, issued in accordance with the Kiwa Regulations for Product Certification, Kiwa declares that legitimate confidence exists that the products supplied by

DSPA B.V.

complying with the technical specifications as laid down in this product certificate and marked with the Kiwa®-mark in the manner as indicated in this product certificate, on delivery, may be relied upon to comply with Kiwa evaluation guideline BRL-K23001/04 “the product certificate for fixed dry aerosol fire extinguishing components”.

Bouke Meekma
Kiwa

Publication of the certificate is allowed.
This certificate consists of 6 pages
Note: Publication of only this front page or parts of the certificate is considered as “not valid”.
Advice: consult www.kiwa.nl in order to ensure that this certificate is still valid

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Certification process consists of initial and regular assessment of:
- **quality system**
- **product**

DSPA Non-Pressurized Condensed Aerosol Generators and Components

Certificate

This product certificate by Kiwa is based on the guideline BRL-K23001/04.

Generator specifications

The products mentioned below belong to this product declaration.
DSPA 11-1, DSPA 11-2, DSPA 11-3, DSPA 11-4, DSPA 11-5, DSPA 11-6, DSPA 11-7 and DSPA 8-1.

Type	Housing Red coated steel	Activation
DSPA 11-1	Disk, radial, double shaped plate	Electrical
DSPA 11-2	Disk, radial, double shaped plate	Electrical
DSPA 11-3	Disk, radial, double shaped plate	Electrical
DSPA 11-4	Disk, radial, double shaped plate	Electrical
DSPA 11-5	Disk, radial, double shaped plate	Electrical
DSPA 11-6	Disk, radial, double shaped plate	Electrical
DSPA 11-7	Disk, axial, double shaped plate	Electrical
DSPA 8-1	Cylindrical, axial	Electrical

Non-pressurized generator.

Application and use

Total flooding fire-extinguishing systems are used primarily for protection against hazards that are in enclosures or equipment that, in itself, includes an enclosure to contain the extinguishant. Condensed aerosol generators can be used as a part of fire fighting systems in buildings, plants or other structures. It covers total flooding systems primarily related to buildings, plant and other specific applications, utilizing electrically non-conducting condensed aerosol fire extinguishants.
The following are typical of such hazards, but the list is not exhaustive:

a) Electrical and electronic hazards;
b) Telecommunications facilities;
c) Flammable and combustible liquids and gases;

Where aerosol generators are used in a potentially explosive application, the suitability of the generator to the atmosphere for the determined life shall be assessed.
The fire extinguishing components shall be suitable for extinguishing fires of the following classes:

- Class A according EN2
- Class B according EN2

Conditions for application

- The numbers and types of the extinguishing components have to be determined in conformity with the guidelines and calculation methods of the supplier.
- Distribution is to be done by supplier or companies authorised by the supplier.
- Before usage an instruction is to be given by a trainer or instructor for this product authorized by the supplier.
- The installation and maintenance of the fire extinguishing components have to take place according to the specifications of the supplier, CEN/TR 15276-2 and/or evaluation guideline BRL-K23003.
- For specific details regarding the owner's manual, CEN/TR 15276-1.

Point of interest during use or limitation of use

The condensed aerosol extinguishing components should not be used on fires involving the following unless relevant testing by accredited testing laboratories has been carried out to the satisfaction of the Authority:

- Deep seated fires in Class A materials
- Chemicals containing their own supply of oxygen, such as cellulose nitrate;
- Mixtures containing oxidizing materials, such as sodium chlorate or sodium nitrate;
- Chemicals capable of undergoing auto thermal decomposition, such as some organic peroxides;
- Reactive metals (such as sodium, potassium, magnesium, titanium and zirconium), reactive hydrides, or metal amides, some of which may react violently with some aerosol extinguishants;
- Condensed aerosol generators shall not be used to protect classified hazards or similar spaces containing flammable liquids or dusts that can be present in explosive air–fuel mixtures unless the generators are specifically listed for use in those environments.
- Temperatures for use of aerosol extinguishing agents shall be within the supplier's listed limits.

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- Unless specifically approved as an agent blend or mixture, systems employing the simultaneous discharge of different agents to protect the same enclosed space shall not be permitted.
- Where unrelated extinguishing or suppression systems, such as a sprinkler system or a gaseous fire-extinguishing system are provided and can operate prior to or during the hold time of the aerosol system, the other agent shall not adversely affect the aerosol.

  The above list may not be exhaustive.

- Care shall be taken when discharging extinguishant into potentially explosive atmospheres. Electrostatic charging of aerosol generators or other conductors not bonded to earth may occur during the discharge of extinguishant. These conductors may discharge to other objects with sufficient energy to initiate an explosion. Where the system is used for inerting, generators shall be adequately bonded and earthed.
- Under certain conditions, the potential for explosive atmospheres may exist. Areas where such potential may exist are classified as hazardous. Condensed aerosols may be used in hazardous areas subject to the supplier obtaining the specific listings and approvals for such areas from the appropriate authorities. The EU Directive 94/9/EC (ATEX Directive) should be taken into consideration.
- For condensed aerosols, special care shall be taken to determine the maximum ambient temperature at which the aerosol generator can be installed, without risk of actuation by temperature itself.
- Systems employing the simultaneous discharge of aerosols and other extinguishants, such as a sprinkler system or a gaseous fire-extinguishing system, to protect the same enclosed space shall not be permitted.
- Aerosol extinguishing systems are intended for the types of fire for which they are a suitable extinguishing medium.
- The design, installation, service, and maintenance of aerosol systems shall be performed by persons skilled in aerosol fire-extinguishing system technology.
- The end user should consider the potential adverse effects of aerosol extinguishing agent discharge residue on sensitive equipment and other objects.
- Local applications [1)] of condensed aerosol extinguishing systems are not covered by this product declaration.
- Local applications require a pre-engineered and pre-designed system which has been tested and approved for a specific application by an authority such as Kiwa or by an accredited testing laboratory.
- For specific details regarding the owner's manual, see CEN/TR 15276-1.

  [1)] a local application is used for the extinguishment of surface fires in flammable liquids, gasses, and shallow solids, where the enclosure does not conform to the requirements for total flooding.

Manual

At delivery the product should be accompanied by an operation manual in the English language, known and authorized by Kiwa.
Following minimum items shall be described:

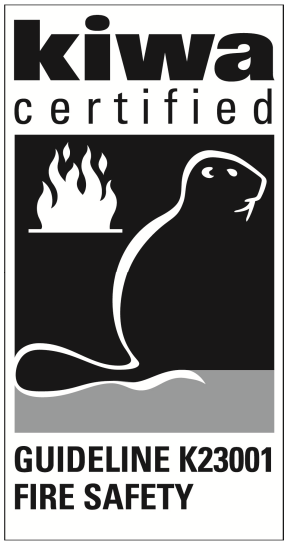
- Type of aerosol generators;
- Design application density;
- Description of occupancies and hazards to be protected against;
- Specification of aerosol generators;
- Equipment schedule or list of materials for each piece of equipment or device, showing device name; supplier, model or part number and description;
- System calculation;
- Enclosure pressurization and venting calculations;
- Description of fire detection, actuation and control systems.
- Requirements for inspection, maintenance and testing of an aerosol fire-extinguishing system and for the training of inspection and maintenance personnel.

For specific details regarding the owner's manual, see CEN/TR 15276-1.

DSPA Non-Pressurized Condensed Aerosol Generators and Components

Marking

The products should be marked with the Kiwa®-mark.



Place of the mark:

- On the generator

Required specifications:

- Name of the product and supplier
- Supplier's type designation
- Production date and serial number
- Mass of aerosol-forming compound
- Temperature range
- Storage humidity range
- Service life
- Distances as specified in table 5
- Reference to the application instructions
- Certification mark
- Class A according EN2
- Class B according EN2

Method of marking:

- Non-erasable and non-detachable;
- Non-flammable;
- Permanent an legible

RECOMMENDATIONS FOR CUSTOMERS

Check at the time of delivery whether:

- The supplier has delivered in accordance with the agreement;
- The mark and the marking method are correct;
- The products show no visible defects as a result of transport etc.

If you should reject a product on the basis of the above, please contact:

- DSPA B.V.

and, if necessary,

- Kiwa Nederland B.V.

Consult the supplier's processing guidelines for the proper storage and transport methods.

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Product specifications

Table 1

Fire Class	Listing	According CEN/TR 15276-1 and ISO15779	Pre burn time	Soak period	Test room	Density
EN2	Material / fuel		in seconds	in seconds	in m^3	in grams in m^3
A	Polymethylmethacrylate	A.6.3 / D.6.3	210	600	112.12	97
A	Polypropylene	A.6.3 / D.6.3	210	600	112.12	58
A	ABS	A.6.3 / D.6.3	210	600	112.12	87
A	Reformed wood (chops)	A.6.4 / D.6.4	360	600	112.12	29
A	MDF	A.6.4 / D.6.4	360	600	112.12	59
A	Multilayers plywood	A.6.4 / D.6.4	360	600	112.12	87
B	Heptane	A.6.2 / D.6.2	30	30	112.12	34

Table 2

Type	Efficiency in %
DSPA 11-1	100
DSPA 11-2	88 - 100
DSPA 11-3	90 - 100
DSPA 11-4	100
DSPA 11-5	94 - 100
DSPA 11-6	100
DSPA 11-7	100
DSPA 8-1	100

Table 3

Type	Housing Type and Discharge method	Agent distribution according CEN/TR 15276-1 and ISO 15779			
		Minimum height / Maximum area coverage (in m)		Maximum height / Maximum area coverage (in m)	
DSPA 11-1	Disk, radial	0.5	3.66 x 1.22	1.83	1.22 x 1.22
DSPA 11-2	Disk, radial	0.5	3.66 x 2.44	2.44	1.22 x 1.22
DSPA 11-3	Disk, radial	0.5	3.66 x 2.44	2.44	1.22 x 1.22
DSPA 11-4	Disk, radial	1.22	3.66 x 3.66	3.05	1.83 x 1.83
DSPA 11-5	Disk, radial	1.22	4.88 x 3.66	3.66	2.44 x 2.44
DSPA 11-6	Disk, radial	1.22	7.32 x 3.66	3.66	2.44 x 2.44
DSPA 11-7	Disk, axial	1.22	7.32 x 1.22	3.05	1.83 x 1.83
DSPA 8-1	Cylinder, axial	2.44	9.76 x 3.66	4.88	4.88 x 3.66

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Table 4

Type	Discharge time In Sec
DSPA 11-1	6 - 10
DSPA 11-2	9 - 15
DSPA 11-3	14 - 26
DSPA 11-4	19 - 31
DSPA 11-5	40 - 60
DSPA 11-6	30 - 50
DSPA 11-7	30 - 50
DSPA 8-1	67 - 89

Table 5

Type	Distance in m		
	75°C	200°C	400°C
DSPA 11-1	0.5	0.15	0.05
DSPA 11-2	0.5	0.15	0.05
DSPA 11-3	0.5	0.15	0.05
DSPA 11-4	1.0	0.25	0.15
DSPA 11-5	1.0	0.25	0.15
DSPA 11-6	1.5	0.35	0.15
DSPA 11-7	1.5	0.50	0.10
DSPA 8-1	1.5	0.75	0.15