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**Date**  
June 26, 2008

**Our reference**  
TQS-BRF-08-5028/nw

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**Subject**

Product certificate of DSPA as fire extinguishing agent

**Introduction**

De DSPA-5 generator is a new product on the fire extinguishing market. It was first produced in 1998 and was introduced in Europe in 2005 by DSPA.nl.

In foreign publications/research the product is regarded as environmentally friendly and not harmful to human beings and animals. To be able to enter the Dutch market it is important to test and assess whether this is also the case within the standards applicable in Europe.

The details regarding the health and environmental aspects were assessed by TNO. On the basis of the documentation available TNO make an assessment concerning the health and environmental aspects. A number of certificates, in which institutes indicate that DSPA does not present any problems with regard to environment and health.

DSPA 5 can be a useful as device for fire fighting. The most beneficial aspect of the DSPA 5 is that it takes away the possibility of "Flashover" and therefore creates a safer environment for fire fighting. This was demonstrated during the tests in the flashover container.

After the ignition of the DSPA 5 the flames were extinguished and the temperature lowered. As a result, the risk of Flashover had been taken away. Due to the fact that the temperature has dropped, you will be able to go inside relatively quickly. With the help of a heat-camera the source can then be determined and extinguished.

**Technical specification**

DSPA-5 generators are recommended for operational application by fire departments (defence), (railroad) transport and other persons, instructed about application and safety measures. The generators are used as a prime fire-fighting device to localize and extinguish fires in closed spaces, particularly in hardly accessible spaces.

TQS works according to The Standard  
Conditions for research instructions given  
to TNO.

The Standard Conditions will be sent on  
request.

Name	Active material (kg)	Discharge time (sec)	Max. temp at 50 cm (°C)	Diameter (mm)	Height (mm)	Total weight (kg)	Area (m <sup>3</sup> )
DSPA 5	2.7	25	< 170	210	110	4.6	60



**Date**  
April 5, 2007

**Our reference**  
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### Health Declaration

'Dry Sprinkler Powder Aerosol Systems' are initially developed, just like the Halon systems, for unoccupied ship compartments. Results of gas analyses of two different DSPA systems are made and are listed in the table below together with the accepted standards.

Component	ppm	Lethal dose 5 –10 min	ppm in standard toxic/danger 30-60 min
Ammonia	25/55	3500	1700
Nitrogen oxide	11.0/33.1	1000	200
Hydrogen cyanide	13.5/29.1	200	100
Carbon oxide	460/480	6000	2400

Although the above mentioned results show that the use of aerosol systems are not toxic, we do give the advice not to use the systems in dormitories and not to stay in an aerosol filled room longer than 5 minutes. To escape through these rooms we recommend the use of safety marks en to protect the nose with a handkerchief or dust cap.

### Conformance criteria and evaluation

The aerosol powder produced by the DSPA is uniquely safe, non-toxic, non-corrosive, non-conductive and environmentally friendly. After thorough testing, the DSPA line of products has been found to meet the following international standards:

- Hughes Associates, Inc Fire Science and engineering; An evaluation of aerosol extinguishing systems for machinery space applications.
- TNO Science and Industry; Health and environmental declaration of the DSPA Extinguishing Systems.
- CEN prEN 15276-1; Fixed fire fighting systems - Condensed Aerosol extinguishing systems - Part 1: Requirements and test methods for components
- CEN prEN 15276-2; Fixed firefighting systems - Condensed aerosol extinguishing systems - Part 2: Design, installation and maintenance systems
- EN 12094; Fixed fire fighting systems - Condensed Aerosol extinguishing systems - Part 1: Requirements and test methods for components.
- NFPA 2010: Standard for Fixed Aerosol Fire-Extinguishing Systems.
- UL-2127 Standard for Inert Gas Clean Agent Extinguishers
- UL-1254 Standard for Pre-Engineered Dry Chemical Extinguishers
- ISO-TC 21/SC 8 N 225 – Aerosol Fire Extinguishing Systems
- CEN TC 191 –Condensed Aerosol Firefighting Systems
- KIWA BRL-K23001/03

Eindhoven, June 2008  
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