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To manufacturers, operators, consultants and persons qualified to carry out the examination, and other interested parties

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Ignitability of coating materials

General

The fire and explosion protection of spraying systems can be facilitated considerably when processing coating materials with a low portion of solvents and a high flash point (generally water-based paints), provided that the spray cloud of the coating materials are considered to be non-ignitable. Substantial research has shown that the ignitability of spray clouds depends on the composition of the coating materials made mainly of water, solvents, and solids. The following classification has been established:

Non-ignitable coating materials

Coating materials of this group have the following composition:

$$[\% \text{ H}_2\text{O}] > 1,70 \times [\% \text{ LM}] + 0,96 \times [\% \text{ ORG}], \text{ (all in \% by weight)}$$

where

H₂O: water;

LM: the entire liquid phase, including liquids with flash points above 60 °C and those liquids **not** listed in the safety data sheet, in which case the entire liquid phase is ignitable in the sprayed state;

ORG: solid phase which is ignitable in the sprayed state (ignitable inorganic or ignitable organic solids) including the solids which have an ignitable inorganic or ignitable organic coating.

Non-ignitable coating materials act like water in the liquid phase and in the sprayed state. If the rinsing and thinner liquids correspond to this category, too, no explosion protection is necessary. Coating materials of this group are classified as being non-ignitable liquid coating material.

A fire extinguishing equipment is not required for spraying systems processing coating materials which are classified to be non-ignitable. However, this does not affect the fire protection as a whole. Even these coating materials may resume ignitability after being partially dried. Moreover, water-based coating materials will burn when strongly exposed to a fire which had been initiated by other sources, and thus present a certain fire load.

Ignitable coating materials

Coating materials which do **not** satisfy the criteria “non-ignitable”. Coating materials of this group are classified as being ignitable liquid coating material.

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