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Freiberg, February 6th, 2002
Red/nb

Report on whether the *PTS – Powder Transfer System* is subject to guideline 94/9/EG (ATEX 95)

Your letter of December 12th, 2001

Dear Mr Dietrich,

We have examined the documents pertaining to your *PTS – Powder Transfer Systems*. Your powder conveying system is distinguished by a source of vacuum, which sucks powder out of a storage bin and conveys it into a cylindrical chamber. A flat filter membrane separates the chamber from the vacuum pump in order to prevent powder from reaching the vacuum pump. Once the chamber is filled, the vacuum valve is closed and pressurized air or nitrogen is supplied to the chamber. Due to the overpressure in the chamber, the powder will be pneumatically discharged into the designated receptacle as soon as the powder outlet valve is opened. This method of conveying powder pneumatically, which you developed, is in my opinion a good solution with regard to both safety technology and industrial safety.

Your question, if the *PTS – Powder Transfer System* according to guideline 94/9/EG (ATEX 95) belongs to group II and falls within category 1, 2 or 3, can be answered negatively.

Motivation

ATEX 95 applies only to explosive atmospheres. An explosive atmosphere for the purposes of the directive 94/9/EC is defined as

a mixture of flammable substances in the form of gases, vapours, mists or dusts with air under atmospheric conditions, in which, after ignition, the combustion spreads to the entire unburned mixture.

According to the latest state of engineering, atmospheric conditions are limited to a pressure range between 0.8 and 1.1 bar.

An explosive atmosphere, as defined by this guideline, exists only for a brief moment during the discharge phase when using pressurized air as a propellant. Based on these circumstances, your apparatus would fall at most within category 3 when using pressurized air. When using nitrogen as a propellant, there are no risks of explosions.

However, this classification is inapplicable even when using pressurized air because, according to guideline 94/9/EG, an equipment must only be classified if the following definitions are true:

Classifiable equipment are

- machines,
- apparatus,
- fixed or mobile devices,
- control components and instrumentation therefore,
- detection or prevention systems,

which, separately or jointly, are intended for the generation, transfer, storage, measurement, control and conversion of energy or the processing of material and which are capable of causing an explosion through their own potential sources of ignition.

Since the *PTS – Powder Transfer System* does not have its own potential ignition source, it is in my opinion not subject to guideline 94/9/EG.

If a hazard assessment of the *PTS – Powder Transfer System* cannot totally exclude the risk of an explosion due to e. g.:

- the temperature of the product to be conveyed,
- powder which ignites spontaneously when in contact with air,
- the possibility of unwittingly imported smouldering combustion,

measures to avoid explosions must be implemented according to guideline 98/37/EG (guidelines for machinery), appendix 1, paragraph 1.5.7.

As long as operating instructions insure that the above mentioned explosion hazards are excluded (rule of exclusion), special measures to avoid explosions are not required.

Best regards,

A handwritten signature in black ink, appearing to read 'Neleke', written in a cursive style.