

Herrn
Dr. K. Hinderer
BFGoodrich Company
500 South Main Street
Akron, Ohio 44318
USA

- Luftpost -

AUG 16 1982

Ludwigshafen,
02.08.82 sa-so
D-HRS/B
Dr. Sand
Tel.: 0621/60-21356

Fire behaviour of plastics
toxicity of thermal decomposition products (*W. German Regulations*)

Dear Dr. Hinderer,

we appreciate the opportunity of exchanging ideas on the above subject as you initiated with your letter to Dr. Doerfel, dated June 23, 1982.

In our country there are no legal requirements on toxicity of thermal decomposition products of materials used as building materials except for noncombustible materials (class A, DIN 4102).

This is due to the fact that until now the toxic hazard of combustible materials was deemed to be known from traditional materials such as wood and has not changed since synthetic materials have been introduced in building construction.

The same applies to other fields of application. Only for plastics foams used as thermal insulation in ship construction, toxicity of thermal decomposition products must be not greater than that of wood decomposition products.

However there is some tendency of building authorities to include combustible materials in certain applications e.g. floor and wall coverings in high rise building into the category of noncombustibles with respect to smoke and toxicity requirements.

As concerns the question of toxic hazard of PVC fire gases, there is no indication from fire statistics that an unusual hazard exists. One has to consider in this context that the use of PVC as wall cladding is not as widespread in our country as in the USA. But for piping and electrical insulation PVC is certainly used in same amounts as in your country.

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Our own work in this field was directed to the assessment of relative toxicity of thermal decomposition products generated in small scale experiments, using rats. This work was passed to the ISO/TC 92 WG 12, now SC 3, the activities of which you are certainly aware. We are wholly in line with the general guide lines laid down in ISO TR 6543. A better understanding of the complex matter is necessary before any of the test methods proposed can be used for regulatory purpose.

In other countries in Europe the situation is similar to ours except France where there is a limitation of nitrogen and chlorine containing synthetic materials in public buildings. Since the hazard estimation is based on analytical measurements only this approach is doubtful, but since the limits are not too stringent this regulation does not do much harm.

The method to DIN 53 436 which was developed in our country is studied by a number of laboratories in Europe and it might be the basis of a EC-regulation. However no quick EC activity in this field is expected.

We hope that this information is of some value for you and we will be pleased to give you more details if needed.

Sincerely

BASF Aktiengesellschaft


Kieferle Sand