

JAN 15 1976

DANGEROUS MATERIALS

RECEIVED

DEC 16 1975

Federation

DECREES OF THE COMMITTEE FOR DANGEROUS MATERIALS R N WHEELER JR.

Announc. of the BMA of March 18, 1973 - III b 4-.....

Technical guideline concentration (TRK) for vinylchloride.

As technical guideline concentration for vinylchloride by July 1, 1975, a value of 5 ppm is stipulated. The TRK value is to be understood as yearly mean value. For a period of one hour, the concentration as mean value, cannot exceed the triple of the TRK-value.

This TRK value is especially valid for the work areas in the

- a) preparation, recovery, storage, filling, transportation and utilization of monomer vinylchloride.
- b) conversion of vinylchloride to unshaped vinylchloridepolymerizates (e. g. PVC-production)
- c) handling of unshaped vinylchloride polymerizates and their molding.

For existing plants to convert vinylchloride into unshaped vinylchloride polymerizates (e.g. PVC-production) a TRK-value of 10 ppm is stipulated. As transition regulation for these plants, until July 1, 1976, a value of 20 ppm is permissible.

The TRK-values for vinylchloride will be checked by January 1, 1977, and adjusted to the state of the technical development by calling on the newest labor-medical experiences.

Motivation.

In establishing the TRK-value¹⁾, as yearly mean value, the determining factor was, that vinylchloride is considered from labor-medical-toxicological point of view, at the present time, a harmful material

¹⁾ General definition: Technical guideline concentration for dangerous materials. Arbeitsschutz (1974) no. 5, page 169/170.

SL 096482

with primary chronic effect. Therefore it is based on a longterm mean value, over a period of one year, with an average workweek of up to 45 hours. The peak concentrations are limited with the stipulated average concentration over a period of one hour, by the triple of the TRK-value. Besides this, also the fluctuations of the harmful substance concentration are taken into consideration¹⁾.

To determine the size of the TRK-value, the followings were determining:

a) the result of the experience- and ventilation-technical measures, taken already, including the, in the near future, attainable technologies.

b) the possibilities, to determine the concentration of vinylchloride within the range of the TRK-value, and control it with registration²⁾

c) that by calling on the hitherto labor-medical experiences, the suggested TRK-value reduces the risk of a health injury in comparison with the working conditions till now.

1) "Technical regulation" Measuring planning, statistical evaluation" (in preparation) in connection with "Recommendations for the measurement and the valuation of dusts dangerous to the health". - Dust - Clean Air (1973) no. 1, page 1-3, as well as Coenen, W., "Measurement and evaluation of the concentrations harmful for the health, especially silicone dusts at jobs of in day-night industries". Dust - Clean air 31 (1971) no. 12. page 484-490.

2) VC/FVC: measures for health protection (pamphlet) Publisher: Verband Kunststofferzeugender Industrie, Frankfurt (1974).

LABOR-, HEALTH- AND SOCIAL-MINISTER OF NORDRHEIN-WESTFALEN

Plants in need of authorization

here: Labor- and immissionprotection at the preparation and finishing of vinylchloride (VC)

Decree of the Minister for Labor-Health and Social-order, dated March 6, 1975 - III B 6 - 8853.17/III A 3 - 8250(III No.6/75)

Severe diseases of the employees, exposed to VC, and the results of animal experiments support that VC belongs to the carcinogen substances. The Commission to examine substances, harmful for health, of the German Researchcommunity did not assign any mor MAK-value for VC. (see Bulletin X of June 14, 1974 of the DFG). The Commission refers to the requirement of special protective- and checking measures, in case if the application of such a substance is technically necessary.

As in case of carcinogen substances, there is a health hazard even in small doses, also precautionary special protective- and checking measures in the area of the immission-protection are required which - as all plants in question subject to authorization are liable as per paragraph 4 of the Federal-Immission-protection-law - can be realized mainly in the authorization procedures, but also with subsequent regulations (paragraph 17 BImSchG).

Until the presently conducted scientific research, and until the decree of obligatory Federal regulations, I ask the plants which prepare and polymerize VC, to observe the following measures:

1. Labor-protection

1.1. New plants

1.1.1. State of the technique.

In the authorization procedure, each part of the plant is to be examined, whether according to the state of the technique, influences of VC are kept as low as possible, for the employees; As long as the, under No. 1.1.2. indicated maximum permissible space-air-concentrations are not guaranteed labor-medically, they cannot be used. As state of technique the paragraph 3, of Section 6 of the Federal-Immission-protection law on the state of the development of progressive procedures, ^{is in force} installations and ways of operation, which seems to guarantee the practical acceptability of a measure to limit the effect of VC on the employee - without taking into consideration personal protective equipment. It is to be examined, whether possibly far-reaching automatic or remote working processes can be used, which would make the staying of the employee in the VC-containing atmosphere not necessary; this refers also to the cleaning of the autoclaves.

1.1.2. Limitation of the space-air-concentration

To limit the concentration of VC in the air, in working areas, the following values are in force:

yearly mean value:.....5 ppm

one hour mean value:.....15 ppm

Working area are areas, in which employees have to stay, independently from the duration of the time they stay.

1.1.3. Checking the air of the working space

The checking of the VC concentration in the air of the space, must be done continuously and registered. Instead of a continuous measurement, spot-checkings are permissible, if the measuring periods are selected statistically, if a sufficient number of spot-checking is carried out to guarantee the formation of a mean value and if the results are statistically evaluated.

Arrangement and number of the measuring places are to be stipulated in the authorization procedure. Each measuring place must be determined separately.

Measuring places have to be provided for, especially in such working areas, where one can count with VC emission.

Supplementary to these space-air-checkings at these determined measuring spots, also control measurements with varying places are to be made to control the measuring procedure and the appropriate position of the measuring places. The authorization is supplied with the reservation, to change the determinations on basis of the control measurements. The measuring results are to be controlled continuously and to be evaluated not longer than in monthly intervals; the evaluations are to be kept in easily visible form for at least 20 years. Any time, on request, measuring results and evaluations have to be submitted to the supervising authority, as well as the required, supplementary information.

The authorizing- and supervising authority has to listen to the Central Office of Safety technique, regarding the measuring procedures, the number and the location of the measuring places, the spot-checkings and the method of evaluation.

1.1.4. Signaling trouble.

Single measuring values over 50 ppm VC in the air of the job, are to be handled as disturbances; therefore, at the measuring place, where this value is exceeded an alarm signal must be given, and the reason for it has to be found out, and determined in writing.

1.1.5. Medical precautionary examinations

Employees, who can be exposed to VC at the job, have to be subjected before the beginning of the employment to a labor-medical suitability examination and to subsequent labor-medical checking examinations, every 6 months. The examinations are based in the principles of the "Trade Union principles for labor-medical precautionary examinations - danger by vinylchloride - drafted July 1974"; these principles can be obtained from the Trade Union of the chemical industry, 6900 Heidelberg 1, Gaisbergstrasse 11.

The examinations had to be conducted by physicians, which were authorized for this specially, either by paragraph 17 of the decree on dangerous materials or according to paragraph 18 of the accident protection regulation "General regulations".

The results of the examinations are to be kept for, at least, 20 years and submit to State Professional physician upon request.

Upon request of the state physician, the state occupational supervision office can oblige the employer, according to paragraph 22 of the regulation on dangerous materials, to undertake, in single cases, further labor-medical examinations.

1.1.6. Register of the employee

The employee who could be exposed on his job to the effect of VC will have a register kept up.

The register is to be kept for at least 20 years, and submitted to the supervising authority upon request. It must contain, at least, the following data:

First-name, family-name, date of birth, address

Day of hiring and end of employment

Description and duration of the job

Data on VC exposure (working time under VC-influence, with consideration of the measuring protocols, regarding control of the air according to no. 1.1.3).

Date and results of the medical precaution examination

Name and address of the examining physician

data about previous activities, where a health hazard existed.

1.2. Existing plants

1.2.1. State of the technique

Existing plants have to be adjusted as soon as possible to the state of the technique. Depending on the technical possibilities, in individual cases, however, transitory delays, until 1980, can be granted.

1.2.2. Limitation of the concentration in the air at the job.

One has to endeavor to observe the values, indicated under 1.1.2. Until the expiration of the, according to no. 1.2.1. determined transitory delays, the double of these values are permissible. The determination of higher concentration values needs my approval.

1.2.3. Control of the air

Regarding the control of the air at the job, the same requirements are set, in the existing plants, as in the new plants (compare no. 1.1.3). No transitory delays can be granted; the measures must be met immediately.

1.2.4. Signaling the trouble.

Also in the existing plants the signaling of disturbances (see no. 1.1.4) are required, however, until the, according to no. 1.2.1. stipulated, transitory delay, a value of 100 ppm, instead of 50 ppm is permissible.

1.2.5. Medical precautionary examinations.

For existing plants, the same requirements are in force as in case of new plants (see no. 1.1.5).

1.2.6. Register of the employees.

The same requirements as in case of new plants are in force also for the existing plants (see no. 1.1.6).

2. Immission-protection.

2.1. New plants

2.1.1. Limitation of the immission.

The requirement in paragraph 5, no. 1 of BImSchG is considered fulfilled when 99% of the value of the total frequency of the total charge - resulting from the pre- and additional charges - does not exceed a concentration of 0.3 mg VC/m^3 air in places, which serve for the permanent staying of people.

The precharging by VC in the areas of influence of the planned plants has to be found out, as a rule, with measuring technique.

The pre-charging can be found out also with calculation in case of clearly known emission-conditions of the existing plants, when an influence by other emission sources in relevant concentrations, is not possible.

2.1.2. Limitation of the emission.

According to no. 2.3.4.3. TA Air, the emission in the waste gas of VC, cannot exceed a massconcentration of 150 mg/m^3 in case of a mass-flow of 3.0 kg/h and more.

2.1.3. Supervision of the emissions.

If the hourly discharge of VC is more than 10 kg (indicated as carbon), the plant has to be equipped with measuring devices to supervise the efficiency of the measures, which register the mass-concentrations of VC in a continuous way. (see no. 2.8.4.3. TA Air). Inasmuch as the operator offers other means, which are statistically relevant, and their equivalency is proven, these processes can be permitted.

2.2. Existing plants.

2.2.1. Additional regulations.

In case of existing plants under the assumption of paragraph 17 of BImSchG, immediately additional regulations have to be observed. The VC emission, contained in the waste gas is to be limited in such a way, that the immission limit value is observed according to no. 2.1.1. Independently from this, in the waste gas itself, a mass concentration of 150 mg/m^3 , in case of a mass-flow of 3 kg/h or more, cannot be exceeded. With regard to the surveillance of the emission, no. 2.1.3. is in force.

2.2.2. Essential alterations.

The essential alteration of a plant needs, according to paragraph 15, section 1, BImSchG approval. Insofar as the question is here about capacity increases, the immission limitation, the emission limitation and the surveillance of the emission regulating principles are in force for new plants according to no. 2.1.1. and 2.1.3.