

~~RE: 0200000000~~
RE: VISTA

TO: Distribution

FROM: T. G. Grumbles
DATE: January 8, 1986

Interoffice
Communication

SUBJ: VISTA TOXICOLOGY TESTING PROTOCOL

VISTA

Following is the criteria the Vista Toxicology Assessment Committee will use as a general guideline in evaluating the testing needs for new or modified products. These guidelines are substantially similar to those used by Conoco Chemicals and specific protocol content is based on our experience, industry practice and the past recommendations of Bill Broddle, Conoco Inc. toxicologist. Background documents are attached.

Testing Needs Assessment

1. New or modified products will be assessed based on their similarity to existing Vista products and similar products in commerce. If the product being reviewed is similar to existing Vista products that have toxicity data which are extrapolatable to the new product, no testing may be needed.
2. If no data is available for similar Vista products then a review of similar commercial products (i.e., other surfactant producers) will be done to determine availability of extrapolatable data.
3. If none of the above is available, then actual testing needs will be determined.

Testing Protocols

The testing protocols to be used include the following acute mammalian tests. These tests are described in the attached background documents.

1. Acute Oral LD₅₀
2. Acute Dermal LD₅₀
3. Acute Skin Irritation - 24 hour exposure
4. Acute Eye Irritation
5. Acute Inhalation Study - to include pilot chamber concentration study

The decision of which specific tests to be run is based on many factors to include the following:

1. Physical properties of the product
2. Conditions of use by customer
3. Potential customer employee and public exposure
4. Modification of product in customers process
5. Customer requests or needs

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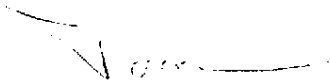
Data Distribution

The acute testing results, in summary form, will be placed on the Material Safety Data Sheet for that product. Full study results can be made available upon request after review of the request by the committee.

Additional Testing Needs

Other toxicological testing such as aquatic toxicity, sub-chronic oral or inhalation studies, and dermal sensitization testing will be evaluated based on indicated need.

Please review the above and give any comments to me by January 31. I will then finalize the protocol guidelines as a separate document companion to the committee charter.



Thomas G. Grumbles

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Attachments

cc DAK

Distribution:

Carl Kerfoot
Alan Nielsen
Bill McClain

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Table 6 Recorded occupations among ASL cases on register

	No ^a
Production worker/operator	69
Autoclave cleaner	51
General maintenance/fitter	8
Other jobs	11
Unknown	17
	156

^aAs several employees have more than one job recorded for them, these numbers do not add up to 118.

fore be expected to be materially increased with the passage of time.

Any method to assess the number of expected new cases is likely to be imprecise. Our method simply looks at the proportions of cases with different latent periods and makes projections based on the distribution of cases that have occurred within different periods of maximum possible latency. In the absence of any information about the numbers of exposed employees it is all that can be done. The results suggest that another 155 cases are likely to be diagnosed within 35 years after first exposure. Compared with the 110 cases in this category diagnosed so far, this means that the industry is approaching the halfway stage in the appearance of ASL. The calculation of 155 more cases within 35 years of first exposure assumes that the hazard was essentially eliminated in the late 1960s. If it was not a further 50 or 60 cases (something slightly less than the number expected to have been induced in men who could have been observed for only 15 to 19 years by the end of 1984) must be added to the total.

Further cases must also be expected to occur 35 or more years after first exposure but it is, as yet, virtually impossible to estimate the number to be expected with any precision. It could, however, easily be around 50. We suggest, therefore, that it should be assumed that there will be another 200–250 deaths from vinyl chloride related ASL over the next 30 years. This estimate is in pronounced contrast with that calculated by Nicholson *et al* who suggest that "within a factor of 2 or 3" there will eventually be a total of 350 deaths from vinyl chloride related ASL in the United States and 1200 in Western Europe alone.⁸ Nicholson *et al* used a complex model to deduce these figures based on the assumption that the incidence of

ASL at any point in time increases in proportion to (i) the first power of the product of the population at risk and the degree of exposure and (ii) a higher power (most probably the third) of the time since exposure first occurred.⁸ Knowledge of the distribution of cases recorded by the National Institute of Occupational Health and Hygiene (1982) by year of first exposure and year of occurrence, the amount of vinyl chloride produced, estimated average exposures at work at different periods from before 1950 to 1970–4, and normal national mortality rates allowed them to make approximate estimates of the variables in these equations and hence to calculate the number of cases that might be expected to occur in the future.

Only time will show which of the two methods will give the better estimate of the number of cases that will eventually be observed. We are encouraged, however, to think that the lower estimate may be the nearer as the method of Nicholson *et al* predicted an increase in the annual number of cases after 1979, whereas the number recorded to date has declined from an average of 9.2 in 1975–9 to an average of 6.8 in 1980–4. The latter figures will, however, almost certainly, be revised upwards in the course of the next few years owing to delayed reporting.

References

- 1 Viola PL. Pathology of vinyl chloride. *Med Lav* 1970;61:174–80.
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- 3 Creech JL, Johnson MW. Angiosarcoma of the liver in the manufacture of PVC. *J Occup Med* 1974;16:19–26, 150–1.
- 4 Maltoni C, Lefemine G. Carcinogenicity bioassays of vinyl chloride. *Environ Res* 1974;7:387–405.
- 5 Barnes AW. Vinyl chloride and the production of PVC. *Proceedings of the Royal Society of Medicine* 1976;69:277–80.
- 6 Fox AJ, Collier PF. Mortality experience of workers exposed to vinyl chloride monomer in the manufacture of polyvinyl chloride in Great Britain. *Br J Ind Med* 1977;34:1–10.
- 7 Baxter PJ, Anthony PP, MacSween RNM, Schauer PJ. Angiosarcoma of the liver: incidence and aetiology in Great Britain. *Br J Ind Med* 1980;37:213–21.
- 8 Nicholson WJ, Henneberger PK, Tarr D. Trends in cancer mortality among workers in the synthetic polymers industry. In: *Industrial hazards of plastics and synthetic elastomers*. New York: Lis, 1984:65–78.