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RE: Ethoxylates

TO: Distribution

FROM: T. G. Grumbles
DATE: October 26, 1987

Interoffice
Communication

SUBJ: UNION CARBIDE EPA 8(E) NOTIFICATION: ETHOXYLATE TOXICITY
TESTING RESULTS

VISTA

Attached is a copy of the notification given to EPA. In summary, Carbide has detected an unusual pattern of toxicity in rabbits exposed to high dose of ethoxylate in skin testing. The pattern was characterized by delayed deaths and evidence of lung injury.

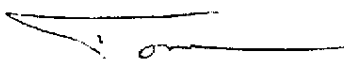
The evidence of lung injury as a result of skin absorption is unusual. The "delayed" deaths referenced in the letter appears to mean they observed deaths later than the normal observation period called for in the testing protocols. Carbide does note that the human significance is unknown.

The letter says the effects were seen with long chain alcohol ethoxylates. Carbide has told me that this means C₁₀ and above, with a broad range of ethoxylation levels.

The impact of the 8(e) notification is difficult to judge. However Carbide will be informing all of their customers of the notification and the results.

We need to prepare ourselves to address questions that may arise as a result of this development. I would propose a conference call with Surfactants Marketing, R&D, and others that may get customer questions regarding this issue. The purpose of the call would be to further discuss the contents of Carbide's letter and assure we all understand how we should respond to questions. This should be done soon. I would propose Wednesday, October 28. Please let me know if this can be arranged.

I will be working with Carbide to determine further details on the testing results, and what steps Vista needs to take to further respond.


T. G. Grumbles

ajo
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cc B. E. A. Larsen, W. J. B. Vogel, C. M. Starks, J. J. Langford
R. E. Lehmkuhl, R. T. Ferrell, R. D. Gamblin, W. L. McClain

DISTRIBUTION: H. W. Hilgers, G. J. Matson, O. C. Kerfoot

VVV 000014984



UNION CARBIDE CORPORATION
INDUSTRIAL CHEMICALS DIVISION

39 OLD RIDGEBURY ROAD, DANBURY, CT 06817-0001

October 21, 1987

Mr. Thomas G. Grumbles
Vista Chemical Company
15990 North Barker's Landing Road
Houston, Texas 77079

Dear Tom,

Attached is a copy of the TSCA Section 8(e) letter which we recently sent to the Environmental Protection Agency. As I mentioned on the phone, we are in the process of preparing a letter to notify customers and co-producers of the results of our studies; and I will be sure you are included on the distribution list, Tom.

Please don't hesitate to contact me again for additional information. I apologize for the delay in getting the enclosed information to you.

Very truly yours,

A handwritten signature in cursive script that reads "Pat Cody".

Patricia L. Cody
Product Safety Manager

Attachments

cc: D. C. Macauley
V. H. Johnkoski

VVV 000014985



UNION CARBIDE CORPORATION 39 OLD RIDGEBURY ROAD, DANBURY, CT 06817-0001
Health, Safety and Environmental Affairs
Chemicals and Plastics Group

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

October 13, 1987

Document Processing Center (TS-790)
Office of Toxic Substances
Environmental Protection Agency
401 M Street, SW
Washington, D.C. 20460

ATTENTION: 8(e) Coordinator

RE: Alkoxylate Nonionic Surfactants

Dear Sir or Madam:

Union Carbide Corporation believes that the following information regarding alkoxylate nonionic surfactants is reportable under Section 8(e) of the Toxic Substances Control Act.

Over the past one-and-a-half years Union Carbide has sponsored acute toxicity studies on a series of 18 different alkoxylate nonionic surfactant materials. The acute lethal toxicity of these materials, as expressed by peroral or 24-hour percutaneous LD₅₀, varied between moderate to very low (i.e., LD₅₀ values ranged between 0.4 to >16 ml/kg by peroral administration and between 0.8 to >16 ml/kg by percutaneous application). An unusual pattern of toxicity, however, was observed in the 24-hour occluded cutaneous application in the rabbit portion of these studies. The pattern was characterized by delayed deaths and macroscopic evidence of lung injury. Microscopic examination of lung tissue was recently conducted on animals treated with the last 7 of the 18 of these materials, these tissues being saved only after recognizing that this pattern of toxicity had emerged. Microscopic findings included bronchopneumonia, pneumonitis, alveolar histiocytosis, edema, congestion and necrosis. In almost all cases, the injury was associated with the presence of foreign vegetable matter in the lower respiratory tract and lung. The foreign vegetable matter was presumably feed particles which had been aspirated.

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Alkoxylate Nonionic Surfactants

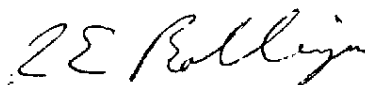
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No one of these studies by itself would trigger a concern regarding substantial risk of adverse health effects. However, when these results are considered together, and taken across the entire family of these surfactants, there appears to be a consistent pattern of toxicity. A review of acute toxicity studies conducted over the past 40 years on various alkoxylated nonionic surfactants further substantiates a pattern of delayed deaths and visual evidence of lung injury. Based upon this review and the recent studies, we believe that not only do long chain alcohol ethoxylates and ethoxy/propoxy copolymer surfactants produce this pattern of toxicity, but that nonylphenol ethoxylates may also exhibit a similar pattern of toxicity. However, the relevance of these studies to human health is unknown.

We will provide copies of full reports when all have been issued which describe in detail the toxic response (days to death), macroscopic and microscopic observation on the recent surfactant acute toxicity and primary irritancy studies. We are advising employees and customers who handle, use, or otherwise may be potentially exposed to these types of surfactants, of these results and of this report to the Environmental Protection Agency. In addition, studies are currently being conducted and further information is being sought to clarify this toxic response and better place it in perspective to potential human health risks.

Please communicate through my office (203/794-5292) or contact Dr. W. C. Kuryla (203/794-5230) of my staff if there are any questions concerning this report.

Very truly yours,



R. E. Bollinger
Director, Occupational Health;
Product Safety/Liability

REB/cg
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CC: Dr. W. C. Kuryla

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