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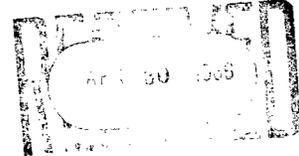
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Submitting Organization		
EASTMAN KODAK CO		
Contractor		
KODAK HEALTH & ENVIR LABS		
Document Title		
TOXICITY AND HEALTH HAZARD SUMMARY FOR 2-BUTENAL WITH COVER LETTER DATED 042886		
Chemical Category		
2-BUTENAL (4170-30-3)		



878216409

April 28, 1986



U.S. Environmental Protection Agency  
TSCA - 801  
PO Box 2060  
Rockville, MD 20852

Ladies and Gentlemen:

Subject: 2-Butenal (CAS 4170-30-3)

Enclosed please find studies in the possession of Eastman Kodak Company (Kodak) required to be submitted to the Environmental Protection Agency under amended regulations published in the Federal Register on January 22, 1986. Routine monitoring data and documents containing only underlying data for a study have not been submitted.

Any questions concerning this submission should be directed to Mr. Lee H. Clem, (716) 722-4740. Please send all acknowledgements to Chemical and Regulatory Information, HAEL-Bldg. 320, Eastman Kodak Company, Rochester, NY 14650.

Sincerely,

*R. Neyp Beil for*

Robert L. Raleigh, M.D., Director  
Health and Environment Laboratories  
(716) 722-2879

RLR/dd:dd  
Enclosures  
Certified Mail - Return Receipt Requested

HEALTH, SAFETY, AND HAZARD FACTORS LABORATORY  
EASTMAN KODAK COMPANY  
KODAK PARK

ACC. NO. 30849  
LAB. NO. 60-308

TOXICITY AND HEALTH HAZARD SUMMARY  
(Does not include physical hazards - flammability, etc.)

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APR 20 1965

CHEMICAL: Crotonaldehyde

SYNONYMS: beta-Methylacrolein

PHYSICAL FORM: Liquid  
MP or BP in °C: MP - 84-104°C  
VP - 19mm Hg at 20°C  
FORMULA: C<sub>3</sub>H<sub>4</sub>O  
C<sub>3</sub>H<sub>4</sub>O

TOXICITY:

Crotonaldehyde vapor causes eye, mucous membrane and lung irritation. The lethal concentration for 30 minute exposure in rats LC<sub>50</sub> is 1,400 ppm. Most deaths occurred from lung injury 6-24 hours after exposure.<sup>1</sup> The maximum duration of exposure to vapor concentrations near saturation at which no deaths occurred in rats is 1 min.<sup>2</sup> In rats exposed for 6 hours to 130-160 ppm in vapor (calculated) deaths occurred in 5/6 in 24-48 hours postexposure. Exposures for 6 hours to 35-100 ppm caused 0/6 deaths in rats.<sup>3</sup> Men exposed experimentally for 10 minutes to 4 ppm of vapor experienced transient eye and upper respiratory tract irritation.<sup>4</sup> In animals given single doses of crotonaldehyde by mouth, injection, or skin applications, the effects are those attributable to severe irritation. It shows moderate toxicity in single dose administration by mouth to rats: the LD<sub>50</sub> being determined at 0.16 gm/kg and 0.3 gm/kg.<sup>5,2</sup> The single dose percutaneous LD<sub>50</sub> after 24 hour skin contact is 0.15-0.2 gm/kg in the rabbit and 0.5-1.0 gm/kg in the guinea pig.<sup>5</sup> The liquid causes severe eye injury and skin burns when held in contact with the skin.<sup>2</sup>

HAZARDS:

The major effects of crotonaldehyde are eye and respiratory tract irritation from vapor exposure; skin irritation and eye burns from liquid contact.<sup>6</sup> Skin burns may result if the liquid is held in contact by clothing. Allergic contact dermatitis probably can occur. The hazards are similar to those of formaldehyde. Crotonaldehyde vapor is more irritating to the eye and upper respiratory tract than formaldehyde as judged by short experimental human exposures.<sup>4</sup> The vapor is less irritating than that of acrolein but more irritating than that of the corresponding saturated aliphatic aldehyde, butyraldehyde. A low concentrations the vapor causes prompt transient symptoms of eye and respiratory tract irritation so that the warning properties of the vapor appear to be good.

PRECAUTIONARY HANDLING:

Handling precautions should be similar to those used for formaldehyde solutions.<sup>7</sup> Closed systems and control ventilation should be used to maintain vapor concentrations below those causing discomfort. Full-face respirators may be used for short exposures. A tentative threshold limit value of 2 ppm has been suggested.<sup>8</sup> Eye and skin protection is recommended in operations where there is the possibility of accidental eye splashed or skin contact. Repeated skin contact with dilute solution should be avoided.

REFERENCES:

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HEALTH HAZARD: (Kodak Park Safety Std. 7.09) SUMMARIZED BY: William L. Sutton, M.D.

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S- 3

DATE: March 23, 1965

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