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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: EPA Reg. No./File Symbol 7969-60
Dazomet

FROM: Lucy D. Markarian 8/20/90 E 9/11/90
Precautionary Review Section
Registration Support Branch
Registration Division (H75-05C)

TO: Susan Lewis (PM 21)
Fungicide - Herbicide
Registration Division (H75-05C)

APPLICANT: BASF Corporation
Agricultural Chemicals
100 Cherry Hill Road
Parsippany, N.J. 07054

FORMULATION FROM LABEL:

Active Ingredient(s):	% by wt.
Dazomet (Tetrahydro-3,5-dimethyl-2H-1,3,5-Thiadiazine-2-Thione	99.0
Inert Ingredient(s):	1.0
Total	100.0%

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BACKGROUND: BASF corporation had submitted the six required test in support of their product Dazomet and was received on October 3, 1976. Thereal Toxicity data was found to be acceptable, however the acute dermal and Inhalation Toxicity Tests, the eye and dermal irritation and sensitization studies were found to be supplementary.

AT the present time Those studies are submitted for review: Acute Inhalation toxicity and eye and dermal irritation studies performed at the Toxicology Department of the BASF Aktiengesellshaft in west Germany.

RECOMMENDATION:

1 - The inhalation study is core guideline data and is acceptable

2. The eye irritation Test is core minimum data but acceptable.

There must be indications that the eyes were examined during the 24 hours preceding the Test. The absence or the presence of opacity must be confirmed by fluorescein dye, and conjunctival irritation must include discharge scores according to the guidelines.

3. Dermal irritation data is considered supplementary. According to the guidelines The Test material, if solid, must be applied as is, but moistened by first weighing 0.5 g and then moistening it with an appropriate amount of water which is generally indicated. An aqueous

RECOMMENDATION: (cont)

suspension (50% w/w) doesn't fit this description.
The wrapping must be semiocclusive.
It is recommended that new data in dermal irritation be submitted that uses undiluted test material for the application.

4. The applicant must still present acute Dermal Toxicity and sensitization data to complete the registration requirements

The Review of the Label must be postponed until such time as the requested information is received and reviewed.

DATA REVIEW FOR ACUTE INHALATION TOXICITY TESTING (§81-3)

Product Manager: (21) Reviewer: L. Markarian
MPID No.: 415630-03 Report Date: 8/20/90
Testing Laboratory: BASF Aktiengesellschaft Report No. 26/028f
Author(s): J. Klimisch
Species: Rat, Wistar
Sex: ♂♀ 8-weeks old Weight: ♂ 229-312g, ♀ 161-206g
Source: Dr. K. Thomae GmbH, D-7950 Biberach. FRG
Test Material: Dazomet (85/3.8) Technical active ingredient
Quality Assurance (40 CFR §160.12): included

Summary:

1. LC_{50} (mg/L): Males = 8.4 mg/L ; Females = 7.29 mg/L (6.09 - 9.5 mg/L) ; Combined = approximately 8.4 mg/L
2. The estimated LC_{50} is
3. Mean Concentration: 8.4, 5.11, 3.83
4. Tox. Category : IV . Classification: Core Guideline

Procedure (Deviations From §81-2): The exposure was in Heni-nose inhalation System INA-20. Animals were restrained in tubes with their nose projected into the inhalation chamber. The aerosol was generated by a vibration dust pulverizing equipment (BIF). To reduce aggiomeration effects the formulation was mixed with 0.5% Aerosil. Concentration was adjusted by varying the aperture width of the metering beaker in the automatic vibrator as well as the oscillation of the beaker. Air flow was 150 L/h for both incoming compressed air and air that dilutes the aerosol. Air supply was conditioned and set at 19-25°C and
Results: was maintained within that range.

Peported Mortality

Exposure Concentration (mg/L)	(NUMBER KILLED/NUMBER TESTED) Males	Females	Combined
8.40	1/10	7/10	8/20
5.11	0/10	1/10	1/20
3.83	0/10	0/10	0/20

Symptomology & Gross Necropsy Findings:
During exposure at 5.11 mg/L slightly negative pressure was used inside the chamber to lower the exhaust pressure by 10% to maintain the integrity of the test atmosphere at the breathing zone. Exhaust was not used at the high level so that higher concentration might be attained. The test atmosphere was gravimetrically analyzed using Millipore vacuum compressed air pump and filtration equipment with 4mm probe and filter at sampling rate of 1.25 m/s once an hour from the breathing zone. Particle size analysis was made using Andersen Stack Samples Mark III with Millipore vacuum compressed airpump and limiting orifice at 3 L/min.

The Animals were observed daily for 14 days. Body weights were Taken at initiation and on days 7 and 14. Viability check was made daily. Necropsy was performed on all animals.

Results

Gravimetric Analysis	Group I	Group II	Group III
	4.05	5.73	6.21
	4.74	4.80	8.25
	3.09	4.85	8.91
	3.45	5.06	10.23
Mean	3.83 ± 0.72	5.11 ± 0.43	8.40 ± 1.68
Nominal Concetne	39.1	59.9	85.2
Particle Size			
5.5 um	14.6	26.4	19.6
2.2 um	38.1	37.0	32.5
1.2 um	10.8	9.6	11.9
< 1.2 um	11.2	—	5.3
MMAD	5.2 um	2.14 um	6.10 u
Geometric standard deviation	3.7	1.7	2.7

The major signs of Toxicity during exposure included diminished pain reflex after 1.5 Hr in Group III and attempts to escape were noticed. Following the exposure Trembling gait, reddish nasal discharge yellow smeared abdominal fur, red encrustation of nares, piloerection squatting posture, reddish urine, anemia in general and paresis observed only in group III. The reddish color of the nose nasal discharge, the blood in the reddish urine & anemia were confirmed by blood Tests.

Although most of the symptoms subsided observations such as bloody in the urine, yellow smears on fur, slightly draggy tiredness and piloerection persisted in group 3 animals. Weight gains were normal among the survivors

The necropsy of the animals That succumbed to Treatment in groups II & III Showed General Congestive hyperemia. At 8.4mg/L one male showed minimal emphysema and 2 females intensified hyperemia.

No gross abnormalities were observed in the Survivors.

DATA REVIEW FOR ACUTE EYE IRRITATION TESTING (§81-4)

Product Manager: (21)
MRID No.: 415630-02
Testing Laboratory: BASF Aktiengesellschaft
Author(s): Dr. J. Kleczka
Species: Rabbit, Vienna white
Sex: 2 ♂ 4 ♀ Weight: 2.82 - 2.94 kg
Source: Gaukler, D-6050 Offenbach/Main FRG
Dosage: 0.1 ml undiluted
Test Material: Dazomet 85/318 Technical active ingredient white powder
Quality Assurance (40 CFR §160.12): included

Reviewer: L. Markarian
Report Date: 8/20/90
Report No. 85-0389

Summary:

Tox. Category: IV Classification: core minimum

Procedure (Deviation From §81-4): 0.1ml (pulverized powder 39 mg) of test material was instilled in the right conjunctival sac. No indication if the eyes were examined prior to test. Evaluations at 1, 24, 48 & 72 hrs after instillation. The presence or the absence of corneal lesion is not varified by fluorescein stain. No record of discharge at any interval

Results:

	Observations (number "positive"/number tested)							
	Hour	Days						
	1	1	2	3	4	7	14	21
Cornea Opacity	0/6	0/6	0/6	0/6				
Iris	0/6	0/6	0/6	0/6				
Conjunctivae Redness	6/6	6/6	1/6	0/6				
Chemosis	4/6	0/6	0/6	0/6				
Discharge	—	—	—	—				
Pupil Contracted	5/6	0/6	0/6	0/6				

Comments: The guidelines specify that the eyes must be examined within 24 hrs of the initiation of the test and the findings confirmed by the use of fluorescein dye. There is no indication that this was done, neither was the absence of any corneal lesion confirmed by fluorescein dye. The discharge evaluations were not made. Therefore the study is core minimum data.

DATA REVIEW FOR SKIN IRRITATION TESTING (§81-5)

Product Manager: (21)
MRID No.: 416630-01
Testing Laboratory: BASF Aktiengesellschaft
Author(s): Dr. H. Kieczka
Species: Rabbit, white Vienna . Gaukler; D-6050 Offenbach/Main Ger.
Age: not specified
Sex : 2♂ 4♀
Weight: 2.82 - 3.14 Kg
Dosage: 0.5 g of suspension 50% w/w
Test Material: Dazomet (85/318) Technical active ingredient (98.2% pure)
Quality Assurance (40 CFR §160.12): included

Reviewer: L. Markarian
Report Date: 8/20/90
Report No. 85/0389

Summary:

The Primary Irritation Index = 0

Toxicity Category:

Classification: Supplementary

Procedure (Deviations From §81-5): The test material was applied to the skin by covering a 2.5 x 2.5 cm patch with 0.5mm layer of the 50% w/w aqueous suspension and placing it on the skin. The diluent was distilled water Exposure was for 4 hrs. The trunks of the rabbits were not wrapped in impervious material, but in porous bandage. Observations were at 1, 24, 48 & 72 hrs. Scoring was according to a scale similar to Draize

Results:

No irritation was recorded for any animal at any interval

Special Comments:

Placement of 1mm of a suspension that weighed 0.5 gram on the patch and then applying this to the skin does not constitute a bona fide 0.5g application that has been moistened according to the guidelines. Therefore the test is classed as supplementary data.