(4-2-93)

MEMORANDUM

SUBJECT: EPA Reg. No./File Symbol 7969-EUP-GN
BASF Facet 75 DF Herbicide

FROM: William S. Woodrow WSW 1-26-93
Precautionary Review Section
Registration Support Branch E 4/2/93
Registration Division (H75-05C)

TO: Robert Taylor / Katen Hicks (PM 25)
Fungicide-Herbicide Branch
Registration Division (H75-05C)

APPLICANT: BASF CORP.
Agricural Chemicals P.O. Box 13528
Research Triangle Park
North Carolina 27709-3528

FORMULATION FROM LABEL:

Active Ingredient(s):	% by wt.
3,7-dichloro-8-quinolinecarboxylic acid	75.0
Inert Ingredient(s):	25.0
Total	100.0%

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BACKGROUND

BASF CORP. submitted six acute toxicity studies to support registration of Facet 75 DF Herbicide (EPA No. 7969-EUP-GN). The MRID NOS. used were 424933-05 through 424933-10. The current application is partial fulfillment of requirements for an EUP.

RECOMMENDATION

1) The acute toxicity studies submitted by BASF are acceptable, and all were graded Guideline studies.

2) Current acute toxicity data profile for Facet 75 DF Herbicide (7969-EUP-GN):

study	Classification	Tox. Category
acute oral LD_{50} > 2200 mg/kg	Guideline	III
acute dermal LD_{50} > 2000 mg/kg	"	III
acute inhalation LC_{50} > 6.06 mg/L	"	IV
eye irritation - irrit. absent by 7 days	"	III
skin irritation - moderate irrit. at 72 hrs	"	III
skin sensitization - not a sensitizer	Guideline	-

3) No additional acute toxicity data are required.

LABELING

1) The CAUTION signal word is appropriate.
2) Add the following to the Precautionary statements: "Causes moderate eye injury".
3) Under Statements of Practical Treatment:
Change the "Get medical attention if irritation persists" (the If on Skin statement), to read "Get medical attention).
4) DELETE THE STATEMENT "MAY CAUSE ALLERGIC SKIN RESPONSE". STUDY INDICATES THIS PRODUCT IS NOT A DERMAL SENSITIZER. E

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DATA REVIEW FOR ACUTE ORAL TOXICITY TESTING (§81-1)

Product Manager: (25) 1-16-92
Reviewer: Woodrow ~~M. Walter~~
MRID No.: 424933-05
Report Date: 1-21-93
Testing Facility: BASF AG Dept. of Tox FRG
Report No. 92/10035
Author(s): Dr. Kirsch
Species: Rat; Wistar
Age: young adult
Observation Days (Post Exposure): (14); other ( )
Weight: 150-300 g
Source: Dr. K. Thomae GmbH Biberach, FRG
Test Material: BAS 514 34 H Facet 75 DF
Quality Assurance (40 CFR §160.12): both G.L.P. & Q.A.

Conclusion:

1. LD_{50} (mg/kg): Males = _____; Females = _____; Combined = _____
2. The estimated LD_{50} is > 2200 mg/kg
3. Tox. Category: III. Classification: Candidate

Procedure (~~Deviations From §81-1~~): Animals acclimated at least 1 week. All animals fasted at least 16 hours pre-test. 5M + 5F administered 2200mg/kg by gavage (aqueous). (10ml/kg)

Results: Animals observed for toxic signs and/or mortality for 14 days. All animals subjected to gross path. exams.

Reported Mortality

DOSAGE (mg/kg)	(NUMBER KILLED/NUMBER TESTED) Males	Females	Combined
2200 mg/kg	0/5	0/5	0/10

Symptomology & Gross Necropsy Findings:

All animals gained weight. All animals appeared normal throughout the study. Necropsy examinations revealed no gross abnormalities.

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DATA REVIEW FOR ACUTE DERMAL TOXICITY TESTING (§81-2)

Product Manager: (25) 1-28-92 Reviewer:- ~~M. Waller~~ Woodrow
MRID No.: 424933-06 Report Date: 1-21-93
Testing Laboratory: BASF AG Dept. Tox ERG Report No. 92/10096
Author(s): Dr. Kitsch
Species: Rat, Wistar
Sex: 5M & 5F Wt.: 200-300g
Test Material: BAS 514 34 H (Facet 75 DF), Water dispersable granule
Quality Assurance (40 CFR §160.12): both G.L.P. & Q.A.

Summary:

1. LD_{50} (mg/kg): Males = ~~—~~; Females = ~~—~~; Combined = ~~—~~;
2. The estimated LD_{50} is > 2000 mg/kg
3. Tox. Category: III. Classification: Guideline

Procedure (~~Deviations from §81-2~~): Animals were acclimated to lab conditions at least 1 week. Fur was clipped from dorsal and dorsal-lateral parts of trunks one day before test. Test material (2000 mg/kg) prepared in aqueous "paste"

Results: prep.: 4 ml (g/100ml. 50) = 200mg. 50x10 = 40ml/ 2000 mg/kg.

Reported Mortality

DOSAGE (mg/kg)	(NUMBER KILLED/NUMBER TESTED) Males	Females	Combined
2000 mg/kg	0/5	0/5	0/10

Symptomology & Gross Necropsy Findings:

40 ml dose (50 mg/100 ml) spread over 50 x 50 cm^2 (approx 19" sq). Applied test mat. covered = porous dressing + semi-occlusive dressing for 24 hrs. Wraps removed, sites wiped. Animals observed for toxic signs and mortality to 14 days. All animals subjected to gross path-exam. No mortality. All animals gained weight. No clinical symptoms, no gross pathology.

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

Product Manager: (25) 2-5-92 Reviewer: W. Woodrow
MRID No.: 424433-07 Report Date: 1-21-93
Testing Laboratory: BASF Tox. Dept-AG FRG Report No. 92/10105
Author(s): Dr. A. Gamer
Species: Rat/Wistar
Sex: M+F Weight: Av. wt. M 254, F 248 g
Source: Dr. K. Thomae GBH
Test Material: BAS 514 34 H (Facet 75 DF) - powder
Quality Assurance (40 CFR §160.12): both G.L.P. & Q.A.

Summary:

1. LC_{50} (mg/kg): Males = ; Females = ; Combined =
2. The estimated LC_{50} is > 6.06 mg/L
3. Mean Concentration:
4. Tox. Category: IV. Classification: Guideline

Procedure ~~(Deviations From §81-2)~~: 5M & 5F rats were exposed to an aerosol of test material for 4 hours, while contained in a 55 l exposure chamber, snout only. Treated animals were observed for toxic signs and

Results: mortality for 14 days. Body weights recorded

Reported Mortality

Exposure Concentration (mg/L)	(NUMBER KILLED/NUMBER TESTED) Males	Females	Combined
6.06 mg/L	0/5	0/5	0/10

~~Symptomology & Gross Necropsy Findings~~:

on days 0, 8 & 14. Animals observed daily. All animals subjected to gross pathological examination.

The test material was stirred while creation of the aerosol.

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A dosing wheel dust generator was used (Gencke/BASF) and a glass cyclone separator (BASF) - aerosol produced using the dust generator and compressed air. Cyclone separator connected downstream from dust generator. Concentration adjusted by varying rotation of metering discs. Compressed air - 1500 liters/hr. inhalation system air adjusted to be 10% lower in pressure - to ensure mixture of test material/air not diluted at breathing zone.

Chamber Concentration measured by collecting samples on pre-weighed millipore filters - samples collected near animal noses - hourly samples: increased at 1 hr samples: mg/L air.

Particle size distribution determined using Cascade Impactor Stack Sampler Mark III (Andersen). Impactor fitted with pre weighed glass fiber discs. Contents of pre-impactor and amounts of test material adsorbed on sampler walls determined gravimetrically.

Results:

1) Chamber Concentration - average of 4 hourly samples: 6.06 mg/L.

2) Particle size distribution:

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Particle size distribution cont.:

Record of respirable particles (→1-3μ):

Impactor stage	EACD 50%* (μ)	(EACD 50%) % distribution	cum. % dist.
5	2.8	19.8%	56.5%
7	1.2	17.3%	39.1%

* effective aerodynamic cutoff dia. 50%

Clinical effects: Irregular respiration + prolonged A.A. animals gained weight.

Gross pathology: (No mortality). No abnormal findings.

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

Product Manager: (25) 10-29-91 Reviewer: ~~M. Waller~~ Woodrow
MRID No.: 424933-08 Report Date: 1-26-93
Testing Laboratory: BASF AG Dept. tox. ERG Report No. 91/11005
Author(s): Dr. Rossbacher
Species: Rabbit, White Vienna
Sex: 2 males, 4 females Weight: M 3.03, F 3.01 kg.
Source: Caulkler D-6050 Offenbach/Maing FRG.
Dosage: 0.1ml bulk volume (50.0mg)
Test Material: BASF 514 34 H (75% Quinclorac) Facet 75 DF Herbicide
Quality Assurance (40 CFR §160.12): both G.L.P.s & Q.A.

Summary:

Tox. Category: III Classification: Guideline

Procedure (~~Deviation From §81-4~~): Animals acclimated at least 8 days prior to test. 0.1ml (50mg.) to right conjunctival sac (right eye), each of 6 rabbits. Eyes examined and scored for irritation at 1Hr, 24, 48 & 72 Hrs, post treatment; ~~Results~~: using scale similar to Draize System.

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 2	6/6 1-2	5/6 1	0/6				
Chemosis	6/6 1-2	5/6 1	0/6	0/6				
Discharge	6/6 2	2/6 1	0/6	0/6				

Comments: Irritation clearing in 7 days or less.

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Product Manager: (25) 10-29-91 Reviewer: ~~M. Walker~~
MRID No.: 424933-09 Report Date: 1-26-93
Testing Laboratory: BASF AG Dept. Tox. ERC Report No.: 91/11006
Author(s): D. Rossbacher
Species: Rabbit, White Vienna
Age: not stated
Sex: 3M + 3F
Weight: M. m 2.77, F 2.77 kg
Dosage: 0.5 g moistened = 0 Lutrol / water
Test Material: BAS 514 34 H, Facet 75 DF Herbicide
Quality Assurance (40 CFR §160.12): both G.L.P. + Q.A.

Summary:

The Primary Irritation Index = —

Toxicity Category: III

Classification: Guideline

Procedure ~~(Deviations From §81-5)~~: Animals acclimated at least 8 days prior to test. Hair clipped from dorsal area of 6 rabbits (5 hrs prior to testing. Test patches were covered (2.5 cm²) with 0.5 g moistened test material (moistened ē dist. water). Test patches secured with a porous dressing. 4 hour exposure. (wrappings removed, sites wiped with Lutrol/water.) examined and scored for irritation at 30-60 min, 24, 48, 72 hours, 8 days + 15 days post patch removal.

Results:

Results:

Time	Av. irrit scores Ery	Ed.
30-60 min	1.67	0
24 hrs	2.0	.1
48 hrs	2.7	.1
72 hrs	2.0	0
8 days	.1	0
15 days	0	0

Special Comments:

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DATA REVIEW FOR SKIN SENSITIZATION TESTING (§81-6)

Product Manager: (25) 1-(6-92 Reviewer: M Wood (new) ~~Waller~~
MRID No.: 424933-10 Report Date: 1-26-93
Testing Laboratory: BASF AG Dept. tox. FRG Report No.: 92/10036
Author(s): Dr. Rossbacher
Species: Guinea pigs, Pirbright white, Dunkin Hartley
Sex: females Weight: 256-321 g
Source: Lippische Versuchstierzucht Hagmann & Co., FRG
Test Material:
Positive Control Material:
Quality Assurance (40 CFR §160.12): both G.L.P. & Q.A.
Method: "Buehler"

Summary:
1. This product is / (is not a dermal sensitizer)
2. Classification: Guideline

Procedure ~~(Deviation From §81-6):~~ The test material is a water dispersible grey, granule. A preliminary effort was made to prepare the highest concentrations of test material, using aqueous ~~Results:~~ aqua bidest. A 75% preparation of test material in aqua bidest (W/W basis). "No higher test substance concentrations were technically applicable". 75% test material dispersed in aqua bidest (W/W) was employed for induction, and also for challenge. Animals were acclimated at least 7 days prior to test.

Animals used:
4 animals pre-test
10 animals (challenge only (75% test m. in aqua bidest)
20 animals induced and challenged using 75% test mat. in aqua bidest.
10 animals vehicle control (did not do this test; stated that knew what to expect based on past exposure.

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Main study - 3 induction applications.
Animals were clipped free of hair on dorsal and lateral surfaces at least 3 hours prior to application.

Test material suspensions stirred using magnetic stirrer immediately before application. 0.5ml 75% test material in aqua bidest applied to clipped animals (75% test M. in aqua bidest) on left flanks ± Covered with 2×2 cm gauze patches, which were secured using 4×4 cm² surgical linen patches. Six hours exposure. This procedure repeated at weekly intervals to total 3 applications, using the same induction site. After 3rd induction application, animals rested two weeks.

Induced and naive control animals (20/10 respectively) were challenged 2 weeks after last induction application, using 75% test material in aqua bidest. Challenge applications to right flanks (naive sites). All induction and challenge applications scored 24 and 48 hours after application. Challenge exposures for 6 hours.

Results:

1) Test group. 1st induction scores 0.0. 2nd induction 1/20 animals 1.0 for Erythema. 3rd induction 4/20 animals 1.0 Ek., 1/20 animals 2.0 score., 2/20 Ek 2.0, 2/20-1.0 for Ed. (7/20 animals showed response following 3rd. induction.

Challeng – 1st Control group – 10 animals (challenge at main site on right side) – 0.00 scoring (Challeng only) – 5 minds challenged using 75% t.m.d dissolved in aqua bidest. (0.0 24 & 48 hrs)

Challeng – test material – animals induced and challenged with 75% t.m in aqua bidest: 0.0 scoring for 24 and 48 hour scoring intervals 20 animals.

A positive control study was conducted using dinitro chlorobenzene : (DNCB)
1st induction using DNCB 1% in ethanol well defined erythema & slight edema in 2/20 animals, 9/20 animals showed very slight erythema & edema. Ethanol vehicle control caused slight erythema in one animal in control. Conc. of test material (DNCB) reduced to 0.5%. 2nd induction, 5/20 animals well defined erythema & slight edema. Conc. of test mat. in 3rd induction reduced to 0.2%. After 3rd induction 7/20 animals well defined erythema. Very slight erythema in 13 of 20 test an.

	0.2% in EtOH	EtOH Cont.
Cont. group 1	0/10	0/10
Cont. grp 2.		0/10
Test grp.	16/20	0/20

Conclusions

1. DNCB positive control animals were sensitized.

2) Animals produced and challenged with test material were not sensitized.

Tox Chem. No. | File Last Updated | Current date

3,5A-Dichloro-8-quinoline carboxylic acid | 1-26-93

Study/Species/Lab/Study# - Date	Material	MRID No.	Results	Tox. Cat.	Core Grade
acute oral LD_{50}, Rat BASF AG Dept. of tox, FRG 92/10035 1-16-92	Facet 75 DF Herbicide	424933 -05	LD_{50} > 2200 mg/kg	III	Guide-line
acute dermal LD_{50}, Rat BASF 92/10096 1-28-92	"	424933 -06	LD_{50} > 2000 mg/kg	III	Guide-line
acute inhalation LC_{50} BASF 92/10105 2-5-92	"	424933 -07	LC_{50} > 6.06 mg/L	IV	Guide-line
eye irritation, Rabbit BASF 91/11005 10-29-91	"	424933 -08	Irritation absent by 7 days	III	Guide-line
skin irritation, Rabbit BASF 91/11006 10-29-91	"	424933 -09	Moderate irritation at 72 hrs	III	Guide-line
skin sensitization, guinea pig BASF 92/10036 1-16-92	"	424933 -10	test mat. did <u>not</u> sensitize guinea pigs	—	Guide-line