Vista Chemical Company

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TGG: JCL: MMG: AJO: RF
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September 26, 1989

VISTA

Mr. Keith Thomas
Vice President Technology
Pennzoil Research
P. O. Box 7569
Woodlands, TX 77387

Dear Keith:

Per your discussion with Ron Bryan and Carl Kerfoot, enclosed are toxicity studies that we have available on the dialkylbenzene, synthetic lubricant base oil stream that you are discussing and considering evaluating. The studies conducted are an acute oral LD_{50}, dermal and eye irritation. In summary this material is non-toxic by ingestion and non-irritating to the eye and skin.

Several items should be noted. This testing was done in 1975 and may not meet all the requirements of current Good Laboratory Practices regulations. Also the product stream of interest was called "Conoco" BBO at that time. This is essentially the same stream currently being considered.

Please call me at 713-588-3445 if you have questions on the enclosed.

Sincerely,

Thomas G. Grumbles, C.I.H.
Environmental Quality Manager

dlj

Enclosures

cc: Mike Clark, Ron Bryan
O. C. Kerfoot-Austin

VVV 000014114

EXPERIMENTAL PROCEDURE: (continued)

Following the observation period, all surviving animals were weighed, sacrificed and necropsied.

RESULTS:

The mortality results during the observation period of 14 days are presented below. Values represent number of dead/number of animals tested, cumulative.

Dosage Level gm./kg.*	TIME OF DEATH FOLLOWING DOSAGE (Days) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	% Mortality
20.00	0/10	0/10	0/10	0/10	0/10	0/10	0/10	0/10	0/10	0/10	0/10	0/10	0/10	0/10	0
28.25	0/10	0/10	0/10	0/10	0/10	0/10	0/10	0/10	0/10	0/10	0/10	0/10	0/10	0/10	0
39.91	0/10	0/10	0/10	0/10	0/10	0/10	0/10	0/10	0/10	0/10	0/10	0/10	0/10	0/10	0

*Specific gravity = 0.8371 @ 23°Centigrade

Dosage Level gm./kg.*	ORAL LD_{50} MORTALITY DATA Mortality/Number of Animals	% Mortality
20.00	0/10 (OM, OF)	0
28.25	0/10 (OM, OF)	0
39.91	0/10 (OM, OF)	0

*Specific gravity = 0.8371 @ 23°Centigrade

There were no mortalities at any dosage level tested. The acute oral LD_{50} of "Conoco" BBO, Sample No. 8558H, 3-14-75, when administered undiluted to young adult male and female SASCO rats is therefore greated than 39.91 g./kg. of body weight (highest dosage level tested).

Animals at all dosage levels exhibited no gross signs of toxicity.

Final body weight records of survivors at termination showed weight gains within expected limits.

Gross necropsy of animals sacrificed at termination showed the tissues to be not remarkable.

SCIENTIFIC ASSOCIATES, INC.

BY: Robert H. Moulton

Robert H. Moulton
Vice-President and Director
Biological Research Services

S. A. Number 204668
bd

VVV 000014115

SCIENTIFIC ASSOCIATES, INC.
6200 S. LINDBERGH. ST. LOUIS. MO. 63123 • TELEPHONE: 314-487-6776

August 7, 1975

SUBJECT: Dermal Irritation Test in Rabbits

SAMPLE DESIGNATION: "CONOCO" BBO
Sample No. 8558H
3-14-75

S. A. Number 204668

SUBMITTED BY: CONOCO
Continental Oil Company
Ponca City, Oklahoma

SUMMARY AND CONCLUSION:
"Conoco" BBO, Sample No. 855H, 3-14-75, when applied undiluted to the intact and abraded skin of six New Zealand albino rabbits was found to produce no apparent skin damage, with a Primary Irritation Index of 0. As the term is defined in the Federal Hazardous Substanc Act (FHSA), the product was not found to be a Primary Irritant.

EXPERIMENTAL PROCEDURE:
Six New Zealand albino rabbits were used to determine the degree of dermal irritation resulting from the topical application of "Conoco" BBO, Sample No. 8558H, 3-14-75 to the skin.

The animals were individually housed in metal cages elevated above the droppings with feed, consisting of Purina Rabbit Chow, and tap water freely available at all times.

The backs of the animals were clipped free of hair and the skin examined before testing. Only those animals without skin defects or irritation were used.

Abrasions (minor incisions through the stratum corneum, but not sufficiently deep to distrub the derma) were made on one area of the backs, while another area was left intact. The animals were immobilized in animal holders, and 0.5 ml. undiluted of "Conoco" BBO, Sample No. 8558H, 3-14-75 was applied under each of two one-inch square gauz patches to the prepared areas on the back of each rabbit.

After the patches had been secured by adhesive tape, the entire trunk of each animal was wrapped with a plastic binder to keep the material in position and in contact with the skin for 24 hours. Following the 24 hours of exposure, the patches were removed; any remaining material was washed off the treated areas, and the resulting reactions evaluated using the scoring method of Draize, Woodward and Calvery (J. Pharmacol. Exptl. Therap., 82, 377, 1944), as given on the following page.

EXPERIMENTAL PROCEDURE: (continued)

	Value
Erythema and eschar formation:	
No erythema	0
Very slight erythema (barely perceptible)	1
Well-defined erythema	2
Moderate to severe erythema	3
Severe erythema (beet redness) to slight eschar formation (injuries in depth)	4
Total possible erythema score	4
Edema formation:	
No edema	0
Very slight edema (barely perceptible)	1
Slight edema (edges of area well-defined by definite raising)	2
Moderate edema (raised approximately 1.0 mm.)	3
Severe edema (raised more than 1.0 mm. and extending beyond the area of exposure)	4
Total possible edema score	4

The average values for erythema and eschar formation at 24 hours and 72 hours for the intact skin areas of exposure were added to the average values of the abraded skin areas of exposure at 24 hours and 72 hours (four values). Similarly, the average values for edema formation at 24 hours and at 72 hours for the intact and abraded skin areas of exposure were added (four values). The Primary Irritation Index is the total of the eight average values divided by four. According to the FHSA method of testing, a Primary Irritant is a substance which produces a skin reaction resulting in a score of five or greater.

RESULTS:

The scores for the 24, 48 and 72-hour observations are given below:

Rabbit No.		24 Hours I*	24 Hours A*	48 Hours I	48 Hours A	72 Hours I	72 Hours A
1	Erythema and Eschar	0	0	0	0	0	0
	Edema Formation	0	0	0	0	0	0
2	Erythema and Eschar	0	0	0	0	0	0
	Edema Formation	0	0	0	0	0	0
3	Erythema and Eschar	0	0	0	0	0	0
	Edema Formation	0	0	0	0	0	0
4	Erythema and Eschar	0	0	0	0	0	0
	Edema Formation	0	0	0	0	0	0
5	Erythema and Eschar	0	0	0	0	0	0
	Edema Formation	0	0	0	0	0	0
6	Erythema and Eschar	0	0	0	0	0	0
	Edema Formation	0	0	0	0	0	0
Erythema and Eschar Average Value		0	0	0	0	0	0
Edema Formation Average Value		0	0	0	0	0	0

I* = Intact A* = Abraded

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VVV 000014117

SCIENTIFIC ASSOCIATES, INC.
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RESULTS: (continued)

"Conoco" BBO, Sample No. 8558H, 3-14-75, when applied undiluted to the intact and abraded skin of New Zealand albino rabbits, caused no apparent skin irritation during the 72 hour test period.

SCIENTIFIC ASSOCIATES, INC.

BY: Robert H. Moulton

Robert H. Moulton
Vice-President and Director
Biological Research Services

VVV 000014118

S. A. Number 204668
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SCIENTIFIC ASSOCIATES, INC.
6200 S. LINDBERGH. ST. LOUIS. MO. 63123 • TELEPHONE: 314-487-6776

August 7, 1975

SUBJECT: Eye Irritation Test in Rabbits

SAMPLE DESIGNATION: "CONOCO" BBO
Sample No. 8558H
3-14-75

S. A. Number 204668

SUBMITTED BY: CONOCO
Continental Oil Company
Ponca City, Oklahoma

SUMMARY AND CONCLUSION:

"Conoco" BBO, Sample No. 8558H, 3-14-75, when instilled undiluted into the conjunctival sac of six New Zealand albino rabbits and the treated eyes not washed following instillation of the test material, produced within 1 hour only slight ocular irritation in the form of slight erythema (6/6 test eyes), slight chemosis (5/6 test eyes), and slight discharge (6/6 test eyes). No corneal opacity was observed. The test eyes returned to normal within the 72 hour observation period.

A maximum average score of 5.0 was recorded at 1 hour. As the term is defined in the Federal Hazardous Substances Act (FHSA), the material "Conoco" BBO, Sample No. 8558H, 3-14-75 was not found to be an Eye Irritant.

EXPERIMENTAL PROCEDURE:

Six New Zealand albino rabbits were used to determine the degree of ocular irritation resulting from the addition of the test material, "Conoco" BBO, Sample No. 8558H, 3-14-75 into the conjunctival sac of the animals.

The animals were individually housed in metal cages elevated above the droppings with feed, consisting of Purina Rabbit Chow, and tap water freely available at all times.

Both eyes of each animal were examined with Fluorescein Sodium Ophthalmic Solution U.S.P. 4 hours before testing, and only those animals without observable eye defects or irritation were used.

One-tenth milliliter of "Conoco" BBO, Sample No. 8558H, 3-14-75 was placed in one eye of each animal by gently pulling the lower lid away from the eyevall to form a cup into which the test material was deposited. The lids were then gently held together for one second and the animal was released. The other eye was not treated and served as a control. The eyes were not washed following instillation of the test material except as noted below. All animals were immobilized in a suitable animal restrainer for 1 hour subsequent to treatment.

VVV 000014119

EXPERIMENTAL PROCEDURE: (continued)

The eyes were examined and the grade of ocular reaction was recorded at 1, 24, 48, and 72 hours, using the scale for scoring ocular lesions as outlined by Lehman, A.J., et. al., in Appraisal of the Safety of Chemicals in Foods, Drugs and Cosmetics Assoc., Food and Drug Officials of the U.S., Second Printing, Topeka, Kansas 1965. The evaluation of the data was in accordance with Section 1500.42, Chapter 2, Title 16, Code of Federal Regulations under the FHSA.

After the initial examination at 24 hours all eyes were washed with sufficient clean tap water at body temperature to remove the residual test sample. All eyes were further examined by placing one drop of Fluorescein Sodium Ophthalmic solution U.S.P. on the cornea. After 5 minutes the excess fluorescein was flushed out with sufficient tap water. Fluorescein Sodium in 2% aqueous solution when applied topically to the eye is used as an ophthalmic diagnostic aid for the detection of corneal lesions. Injured areas of the cornea appeared greenish yellow following application of fluorescein.

RESULTS:

A summary of the scores for the 1, 24, 48, and 72 hour observations is given below:

Rabbit No.	Structure	1 Hour	24 Hours	48 Hours	72 Hours
	Cornea	0	0	0	0
1	Iris	0	0	0	0
	Conjunctivae	4	0	0	0
	Cornea	0	0	0	0
2	Iris	0	0	0	0
	Conjunctivae	6	2	0	0
	Cornea	0	0	0	0
3	Iris	0	0	0	0
	Conjunctivae	6	0	0	0
	Cornea	0	0	0	0
4	Iris	0	0	0	0
	Conjunctivae	4	4	0	0
	Cornea	0	0	0	0
5	Iris	0	0	0	0
	Conjunctivae	6	4	0	0
	Cornea	0	0	0	0
6	Iris	0	0	0	0
	Conjunctivae	4	2	0	0
	Average	5.0	2.0	0.0	0.0

VVV 000014120

S. A. Number 204668

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RESULTS: (continued)

"Conoco" BBO, Sample No. 8558H, 3-14-75, when instilled undiluted into the conjunctival sac of six New Zealand albino rabbits and the treated eyes not washed following instillation of the test material, produced within 1 hour only slight ocular irritation in the form of slight erythema of the bulbar and palpebral conjunctivae (6/6 test eyes), slight chemosis of the lids (5/6 test eyes), and slight discharge (6/6 test eyes). No corneal opacity was observed. The test eyes returned to normal within the 72 hour observation period.

A maximum average score of 5.0 was recorded at 1 hour.

SCIENTIFIC ASSOCIATES, INC.

BY: Robert H. Moulton

Robert H. Moulton
Vice-President and Director
Biological Research Services

S. A. Number 204668
bd

VVV 000014121

SCALE FOR SCORING OCULAR LESIONS*

(1) Cornea

(A) Opacity-degree of density (area most dense taken for reading)
- No Opacity 0
- Scattered or diffuse area, details of iris clearly visible 1
- Easily discernible translucent areas, details of iris slightly obscured 2
- Opalescent areas, no details of iris visible, size of pupil barely discernible. 3
- Opaque, iris invisible 4

(B) Area of cornea involved
- One quarter (or less) but not zero 1
- Greater than one quarter, but less than half 2
- Greater than half, but less than three quarters 3
- Greater than three quarters, up to whole area. 4

Score equals A x B x 5 Total maximum = 80

(2) Iris

(A) Values
- Normal 0
- Folds above normal, congestion, swelling, circumcorneal injection (any or all of these or combination of any thereof) iris still reacting to light (sluggish reaction is positive 1
- No reaction to light, hemorrhage, gross destruction (any or all of these) 2

Score equals A x 5 Total maximum = 10

(3) Conjunctivae

(A) Redness (refers to palpebral and bulbar conjunctivae excluding cornea and iris)
- Vessels normal 0
- Vessels definitely injected above normal 1
- More diffuse, deeper crimson red, individual vessels not easily discernible 2
- Diffuse beefy red 3

(B) Chemosis
- No swelling 0
- Any swelling above normal (includes nictitating membrane) 1
- Obvious swelling with partial eversion of lids. 2
- Swelling with lids about half closed 3
- Swelling with lids about half closed to completely closed 4

(C) Discharge
- No discharge 0
- Any amount different from normal (does not include small amounts observed in inner canthus of normal animals) 1
- Discharge with moistening of the lids and hairs just adjacent to lids 2
- Discharge with moistening of the lids and hairs, and considerable area around the eye 3

Score equals (A + B + C) x 2 Total maximum = 20

The maximum total score is the sum of all scores obtained for the cornea, iris, and conjunctivae. Total maximum score possible = 110.

*Lehman, A.J. et al., Appraisal of the Safety of Chemicals in Foods, Drugs, and Cosmetics, Assoc. Food and Drug Officials of the U.S., Austin Texas, 1959.

Vista Chemical Company

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TGG: JCL: MMG: AJO: RF
XF: 283.1

VISTA

September 26, 1989

Mr. Paul Hogen
Daubert Chemical
4700 S. Central Avenue
Chicago, Illinois 60638

Dear Paul:

This letter is in response to your questions regarding the status of Vista N-500, N-600L, and V-3050 Specialty Alkylate under 40 CFR 261 and California Proposition 65.

40 CFR 261 is the section of federal regulations that define hazardous waste. These Vista products are not listed by name nor do they exhibit defined characteristics in 40 CFR 261 that would cause them to be classed as hazardous waste.

As to California Proposition 65, based on current analytical data and methods, these products contain no detectable quantities of the chemicals listed by California Proposition 65.

Please call me at 713-588-3445 if you have questions on the above.

Sincerely,

Thomas G. Grumbles, C.I.H.
Environmental Quality Manager

dlj

cc: Tanya Gillette

TGG: JCL: ~~MMG~~: AJO: RF

XF: _____

TO: John Roheim-Austin

FROM: T. G. Grumbles
DATE: September 26, 1989

Interoffice Communication

SUBJ: **Multiple Items for "Coordination"**

VISTA

As we have discussed, I see a need for us to schedule some time to discuss multiple items of mutual need and areas where we need to assure coordination and influence action. I think we should wait for Dr. Penny to get here. Below is a preliminary list.

1. GLP regulations and in-house testing.

2. Shipping Transfer and Storage Manual.
   a. Revision
   b. Maintenance

3. PMN testing requirements.

4. Vista Toxicology Assessment Committee
   a. Structure
   b. Future "functioning"

5. MSDS preparation and review.

6. Existing toxicological database.

7. Product Liability/New Product Development Process.

8. SDA activities and committees.

As you can see, we'll probably need a day or more to achieve appropriate attention and planning. Also, the list will grow before we meet.

I would suggest a meeting in mid October in Austin. Thoughts?

T. G. Grumbles

dlj