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1001 G Street, N.W.
Suite 500 West
Washington, D.C. 20001
tel. 202.434.4100
fax 202.434.4646

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Writer's Direct Access
Thomas C. Berger
(202) 434-4285
berger@khlaw.com

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TSCA Confidential Business Information Center (7407M)
EPA East - Room 6428 Attn: Section 8(e)
U.S. Environmental Protection Agency
1201 Constitution Avenue, NW
Washington, DC 20004-3302

Re: Valspar Corporation; TSCA Section 8(e) Submission for Hydroquinone Diglycidyl Ether (HQDGE) (CAS Reg. No. 2425-01-6)

Dear Sir or Madam:

On behalf of our client, Valspar Corporation (Valspar), we are delivering to the U.S. Environmental Protection Agency (EPA) under section 8(e) of the Toxic Substances Control Act (TSCA) results of an "Ames" test using the test substance hydroquinone diglycidyl ether (HQDGE) (CAS Reg. No. 2425-01-6). We are enclosing a summary report of the results.

Although this submission is made in accordance with EPA's Section 8(e) *Notification of Substantial Risk; Policy Clarification and Reporting Guidance* (68 Fed. Reg. 33,129, Jun. 3, 2003), Valspar does not consider the results particularly remarkable nor does Valspar necessarily consider positive *in vitro* data in and of themselves reportable under section 8(e), particularly when the test substance is only at the research and development (R&D) stage, as is the case here. Valspar currently is developing HQDGE solely for FDA-regulated food contact use. Valspar is making this submission at this time to cover the possibility that in the future one or more non-exempt applications for this substance may evolve, and, thus, Valspar is submitting this information out of an abundance of caution.

Summary of Results

AMES Test

HQDGE was evaluated in the Bacterial Reverse Mutation Screen using the plate incorporation method as indicated in Trial 8228873-B1 (*see* attached Tables 1 and 2). Revertant frequencies for all doses of HQDGE, in tester strains TA98 with S9, TA1537 with and without S9, and WP2*uvr*A without S9, approximated those observed in the concurrent vehicle control cultures. In contrast, dose-dependent increases in revertant frequencies, to as high as 105-fold control values, were observed in tester strains TA98 without S9, TA100 and TA1535 with and

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without S9, and. WP2*uvr*A with S9. All positive and vehicle control values were within acceptable ranges, and all criteria for a valid, study were met.

According to the conducting laboratory, the results indicate HQDGE was positive in the Bacterial Reverse Mutation Screen (Plate Incorporation Method ±S9) under the conditions, and according to the criteria, of the study protocol.

* * *

We thank you in advance for your consideration of this information. If you have any questions regarding this submission, you may contact:

Ms. Lynn Rutkowski
Regulatory Affairs Supervisor
Valspar Corporation
2001 Tracy Street
Pittsburgh, Pennsylvania 15233
Tel: 412-734-8583
Fax: 412-766-8953
E-mail: lrutkowski@valspar.com

Sincerely,

Thomas C. Berger /P.O.B.

Thomas C. Berger

Enclosures

COVANCE
THE DEVELOPMENT SERVICES COMPANY

Report

Study Title	Bacterial Reverse Mutation Screen: Plate Incorporation Method ±S9 with Hydroquinone Diglycidyl Ether
Study Director	Leon F. Stankowski, Jr., PhD
Sponsor	Valspar Packaging Coatings Group 2001 Tracy Street Pittsburgh, Pennsylvania 15233 United States of America
Test Facility	Covance Laboratories Inc. 9200 Leesburg Pike Vienna, Virginia 22182-1699 United States of America
Covance Study Number	8228873
Covance Client Code	1006888
Genetic Toxicology Protocol Modifier	409SC, Design 7
Page Number	1 of 6

STUDY INFORMATION

Test Article

The test article was supplied by the Sponsor on 10 May 2010 as a flocculent white powder with the following information/characteristics.

Test article	Batch No.	Storage	Purity	Expiration Date
hydroquinone diglycidyl ether (HQDGE)	AL 634-74	room temperature with desiccant	99.4%	NP

NP = Not provided

Study Timetable

Experimental Start Date 18 May 2010
Experimental Completion Date 24 May 2010

DATA INTERPRETATION

Hydroquinone diglycidyl ether (HQDGE) was evaluated in the Bacterial Reverse Mutation Screen using the plate incorporation method as indicated in Trial 8228873-B1 (Tables 1 and 2). Revertant frequencies for all doses of HQDGE, in tester strains TA98 with S9, TA1537 with and without S9, and WP2*uvr*A without S9, approximated those observed in the concurrent vehicle control cultures. In contrast, dose-dependent increases in revertant frequencies, to as high as 105-fold control values, were observed in tester strains TA98 without S9, TA100 and TA1535 with and without S9, and WP2*uvr*A with S9.

All positive and vehicle control values were within acceptable ranges, and all criteria for a valid study were met.

CONCLUSION

The results indicate Hydroquinone diglycidyl ether was positive in the Bacterial Reverse Mutation Screen (Plate Incorporation Method ±S9) under the conditions, and according to the criteria, of the study protocol.

Study Director:

Leon F. Stankowski, Jr., PhD
Genetic and Molecular Toxicology
Covance-Vienna

27 Oct/ 2010
Date

Table 1
Mutagenicity Assay Results with S9

Study No.: 8228873
Trial No.: 8228873-B1 Date Plated: 5/18/2010
Plating Method: Plate incorporation assay

Strain	Compound	Dose level (µg/plate)	Mean revertants per plate	SD	Ratio treated/ vehicle	Individual revertant colony counts
TA98	**Hydroquinone diglycidyl ether**	5000	*3.0*	*0.0*	*0.1*	3 P M R, 3 P M R
		3330	*13.0*	*1.4*	*0.6*	12 P M R, 14 P M R
		1000	*29.0*	*1.4*	*1.3*	30 P N, 28 P N
		333	*17.0*	*2.8*	*0.8*	19 N, 15 M N
		100	*15.5*	*0.7*	*0.7*	16 N, 15 N
		33.3	*18.5*	*0.7*	*0.8*	19 N, 18 N
		10.0	*15.5*	*0.7*	*0.7*	16 N, 15 N
	Dimethyl Sulfoxide		*22.0*	*1.4*		21 N, 23 M N
TA100	**Hydroquinone diglycidyl ether**	5000	*172.0*	*116.0*	*1.7*	254 P M R, 90 P M R
		3330	*715.0*	*55.2*	*7.1*	676 P M R, 754 P M R
		1000	*1630.0*	*151.3*	*16.2*	1523 N, 1737 N
		333	*711.5*	*14.8*	*7.1*	701 N, 722 N
		100	*256.0*	*15.6*	*2.5*	245 N, 267 N
		33.3	*142.5*	*3.5*	*1.4*	145 N, 140 N
		10.0	*115.5*	*21.9*	*1.1*	100 N, 131 N
	Dimethyl Sulfoxide		*100.5*	*6.4*		105 N, 96 N
TA1535	**Hydroquinone diglycidyl ether**	5000	*7.0*	*7.1*	*0.8*	2 P M R, 12 P M R
		3330	*109.0*	*11.3*	*12.1*	101 P M R, 117 P M R
		1000	*944.0*	*29.7*	*104.9*	965 N, 923 N
		333	*623.0*	*87.7*	*69.2*	561 N, 685 N
		100	*182.0*	*8.5*	*20.2*	176 N, 188 N
		33.3	*37.5*	*4.9*	*4.2*	34 N, 41 N
		10.0	*14.5*	*0.7*	*1.6*	15 N, 14 N
	Dimethyl Sulfoxide		*9.0*	*0.0*		9 N, 9 N
TA1537	**Hydroquinone diglycidyl ether**	5000	*0.5*	*0.7*	*0.1*	0 P M R, 1 P M R
		3330	*2.0*	*1.4*	*0.3*	1 P M R, 3 P M R
		1000	*7.5*	*6.4*	*1.1*	12 N, 3 N
		333	*9.0*	*5.7*	*1.3*	5 N, 13 N
		100	*7.0*	*4.2*	*1.0*	4 N, 10 N
		33.3	*8.5*	*3.5*	*1.2*	11 N, 6 N
		10.0	*7.0*	*4.2*	*1.0*	10 N, 4 N
	Dimethyl Sulfoxide		*7.0*	*1.4*		6 N, 8 N

Key to Plate Postfix Codes

P	Precipitation of test article observed
M	Plate counted manually
R	Reduced background bacterial lawn
N	Normal background bacterial lawn

Table 1 (cont.)
Mutagenicity Assay Results with S9

Study No.: 8228873
Trial No.: 8228873-B1 Date Plated: 5/18/2010
Plating Method: Plate incorporation assay

Strain	Compound	Dose level (µg/plate)	Mean revertants per plate	SD	Ratio treated/ vehicle	Individual revertant colony counts
WP2*uvr*A	**Hydroquinone diglycidyl ether**	5000	*12.0*	*1.4*	*0.8*	13 P M R, 11 P M R
		3330	*30.0*	*4.2*	*1.9*	27 P M R, 33 P M R
		1000	*45.0*	*5.7*	*2.8*	49 M N, 41 M N
		333	*32.5*	*9.2*	*2.0*	39 N M, 26 N M
		100	*20.5*	*2.1*	*1.3*	19 M N, 22 M N
		33.3	*19.5*	*0.7*	*1.2*	19 M N, 20 M N
		10.0	*14.0*	*4.2*	*0.9*	11 M N, 17 M N
	Dimethyl Sulfoxide		*16.0*	*1.4*		15 M N, 17 M N
TA98	**BP**	2.5	*412.5*	*14.8*	*18.8*	402 N, 423 N
TA100	**2AA**	2.5	*1234.5*	*132.2*	*12.3*	1141 N, 1328 N
TA1535	**2AA**	2.5	*146.5*	*4.9*	*16.3*	143 N, 150 N
TA1537	**2AA**	2.5	*93.5*	*17.7*	*13.4*	106 N, 81 N
WP2*uvr*A	**2AA**	25.0	*564.5*	*64.3*	*35.3*	610 N, 519 N

Key to Positive Controls		Key to Plate Postfix Codes	
BP	Benzo{a}pyrene	P	Precipitation of test article observed
2AA	2-aminoanthracene	M	Plate counted manually
		R	Reduced background bacterial lawn
		N	Normal background bacterial lawn

Table 2
Mutagenicity Assay Results without S9

Study No.: 8228873
Trial No.: 8228873-B1 Date Plated: 5/18/2010
Plating Method: Plate incorporation assay

Strain	Compound	Dose level (µg/plate)	Mean revertants per plate	SD	Ratio treated/ vehicle	Individual revertant colony counts
TA98	**Hydroquinone diglycidyl ether**	5000	*0.0*	*0.0*	*0.0*	0 P M R, 0 P M R
		3330	*0.0*	*0.0*	*0.0*	0 P M R, 0 P M R
		1000	*5.0*	*4.2*	*0.5*	8 N, 2 N
		333	*27.5*	*7.8*	*2.8*	22 N, 33 N
		100	*20.5*	*7.8*	*2.1*	15 N, 26 N
		33.3	*16.5*	*2.1*	*1.7*	15 N, 18 N
		10.0	*15.5*	*3.5*	*1.6*	18 N, 13 N
		3.33	*10.5*	*2.1*	*1.1*	12 N, 9 N
		1.00	*8.0*	*1.4*	*0.8*	9 N, 7 N
	Dimethyl Sulfoxide		*10.0*	*0.0*		10 N, 10 N
TA100	**Hydroquinone diglycidyl ether**	5000	*0.0*	*0.0*	*0.0*	0 P M R, 0 P M R
		3330	*0.0*	*0.0*	*0.0*	0 P M R, 0 P M R
		1000	*627.0*	*234.8*	*6.7*	461 P R, 793 P R
		333	*1367.0*	*90.5*	*14.6*	1303 N, 1431 N
		100	*805.5*	*17.7*	*8.6*	818 N, 793 N
		33.3	*445.0*	*8.5*	*4.8*	451 N, 439 N
		10.0	*204.0*	*19.8*	*2.2*	190 N, 218 N
		3.33	*121.0*	*9.9*	*1.3*	128 N, 114 N
		1.00	*120.0*	*9.9*	*1.3*	113 N, 127 N
	Dimethyl Sulfoxide		*93.5*	*9.2*		100 M N, 87 N
TA1535	**Hydroquinone diglycidyl ether**	5000	*0.0*	*0.0*	*0.0*	0 P A M, 0 P A M
		3330	*0.0*	*0.0*	*0.0*	0 P M R, 0 P M R
		1000	*0.0*	*0.0*	*0.0*	0 P M R, 0 P M R
		333	*101.5*	*19.1*	*7.8*	115 N, 88 N
		100	*105.5*	*3.5*	*8.1*	108 N, 103 N
		33.3	*78.0*	*1.4*	*6.0*	79 N, 77 N
		10.0	*38.5*	*9.2*	*3.0*	45 N, 32 N
		3.33	*25.5*	*7.8*	*2.0*	31 N, 20 N
		1.00	*14.0*	*1.4*	*1.1*	15 N, 13 N
	Dimethyl Sulfoxide		*13.0*	*0.0*		13 N, 13 N

Key to Plate Postfix Codes

P	Precipitation of test article observed
M	Plate counted manually
R	Reduced background bacterial lawn
N	Normal background bacterial lawn
A	Absence of background bacterial lawn

Table 2 (cont.)
Mutagenicity Assay Results without S9

Study No.: 8228873
Trial No.: 8228873-B1 Date Plated: 5/18/2010
Plating Method: Plate incorporation assay

Strain	Compound	Dose level (µg/plate)	Mean revertants per plate	SD	Ratio treated/ vehicle	Individual revertant colony counts
TA1537	**Hydroquinone diglycidyl ether**	5000	*0.0*	*0.0*	*0.0*	0 P A M, 0 P A M
		3330	*0.0*	*0.0*	*0.0*	0 P M R, 0 P M R
		1000	*4.0*	*4.2*	*0.7*	1 N M, 7 N M
		333	*2.5*	*2.1*	*0.4*	1 M N, 4 N
		100	*5.5*	*0.7*	*0.9*	6 N, 5 N
		33.3	*8.0*	*5.7*	*1.3*	4 N, 12 N
		10.0	*8.0*	*1.4*	*1.3*	7 N, 9 N
		3.33	*7.0*	*4.2*	*1.2*	10 N, 4 N
		1.00	*4.5*	*3.5*	*0.8*	2 N, 7 N
	Dimethyl Sulfoxide		*6.0*	*0.0*		6 N, 6 N
WP2*uvr*A	**Hydroquinone diglycidyl ether**	5000	*0.0*	*0.0*	*0.0*	0 M P R, 0 M P R
		3330	*0.0*	*0.0*	*0.0*	0 M P R, 0 M P R
		1000	*0.0*	*0.0*	*0.0*	0 M P R, 0 M P R
		333	*3.5*	*0.7*	*0.2*	3 M N, 4 M N
		100	*21.0*	*2.8*	*1.3*	23 M N, 19 M N
		33.3	*30.0*	*9.9*	*1.9*	23 M N, 37 M N
		10.0	*17.0*	*1.4*	*1.1*	16 M N, 18 M N
		3.33	*13.5*	*6.4*	*0.8*	9 M N, 18 M N
		1.00	*13.0*	*4.2*	*0.8*	10 M N, 16 M N
	Dimethyl Sulfoxide		*16.0*	*4.2*		13 M N, 19 M N
TA98	**2NF**	1.0	*413.0*	*42.4*	*41.3*	443 N, 383 N
TA100	**Sodium azide**	2.0	*1001.0*	*90.5*	*10.7*	937 N, 1065 N
TA1535	**SA**	2.0	*806.5*	*44.5*	*62.0*	838 N, 775 N
TA1537	**ICR**	2.0	*92.0*	*17.0*	*15.3*	104 N, 80 N
WP2*uvr*A	**4-nitroquinoline-N-oxide**	1.0	*163.5*	*7.8*	*10.2*	169 N M, 158 N M

Key to Positive Controls		Key to Plate Postfix Codes	
2NF	2-nitrofluorene	P	Precipitation of test article observed
SA	sodium azide	M	Plate counted manually
ICR	ICR-191	R	Reduced background bacterial lawn
4NQO	4-nitroquinoline-N-oxide	N	Normal background bacterial lawn
		A	Absence of background bacterial lawn