FOREWORD INTRODUCTION

TEXANOL

CAS N°: 25265-77-4

Substance

End Point	:	**IDENTIFIERS, PHYSICAL AND CHEMICAL PROPERTIES**
Chemical Name	:	**Propanoic acid, 2-methyl-, monoester with 2,2,4-trimethyl-1,3-pentanediol**
Common Name	:	**Texanol**
CAS Number	:	**25265-77-4**

Synonyms

Chissocizer CS 12

CS 12

Isobutyraldehyde tishchenko trimer

Isobutyric acid, ester with 2,2,4-trimethyl-1,3-pentanediol

Texanol ester alcohol

2,2,4-Trimethyl-1,3-pentanediol monoisobutyrate

Properties & Definitions

Molecular Formula	:	**C12H24O3**
Molecular Weight	:	**216.32**
Melting Point	:	**-50C**
Boiling Point	:	**254C**
State	:	**Liquid**
Flash Point	:	**120C (o-cup)**
Flamable Limit	:	**0.62% at 149C - 4.24% at 201C**
Density	:	**0.95 at 20C**
Vapour Pressure	:	**0.013 mbar (0.010 mmHg) at 20C**
Octanol/Water Partition Coefficient	:	**log Pow = 3.47 at 25C experimental**
Water Solubility	:	**858 mg/L at 18-22C ***
Colour	:	**Colourless**
Odour	:	**Mild**
Additives	:	**No additive typically present.**
Impurities	:	**2,2,4-Trimethyl pentane-1,3-diol 0.1% (CAS RN: 144-19-4); TXBI (texanol isobutyrate) 0.6% (CAS RN = 6846-50-0); NPGDI 0.1%; TMPI : trace; 3-isobutyroxy-2,2,4-trimethyl pentanol: trace; 3-oxo-2,2,4-trimethyl penten-1-ol: trace; keto ester: trace.**
General Comments	:	VP = 0.017 mbar (0.013 mmHg) at 25C is also reported.*In distilled water; 519 mg/L in diluent water at 18-22C. Vapor density : 7.45 (air=1); auto ignition temperature 393C. Material is unlikely to accumulate a static charge which could act as an ignition source. Stable; can react with strong oxidizing agents. Polymerizaiton will not occur.

Overall Evaluation

EXPOSURE

ENVIRONMENTAL EXPOSURE

Based on its physiochemical properties, the test material will not be a persistent environmental contaminant. With the exception of an unlikely spill situation (99% of the material is handled in closed tanks and drums; formulation of latex paints, which accounts for 84% of the total use and over 97% use of the non-intermediate use of the material is conducted in closed equipment), the only environmental exposure will be via the air during the drying of paint. The low vapor pressure (0.013 mbar at 20C) and high boiling point (244C) of the material would preclude high localized airborne concentrations of the test material. Estimated atmospheric residence time for the test material is 403 hours, which predicts ultimate degradation of the test material in air.

CONSUMER EXPOSURE

The primary exposure to this substance is during its end use in latex paint, during application and subsequent drying of the paint In order to characterize worker and consumer exposure to this material a study was

conducted in which airborne concentrations of the substance were measured in a study conducted to characterize worker and consumer exposure to volatile components during field application and subsequent drying of water based polyvinyl acetate paints. Paints were applied using airless spraying of roller/brush methods in rooms having either 0.5 or 5.0 air changes per hour. For each scenario, a personal breathing zone air sample was collected during application, and fixed station air samples were collected during application and 6 hours, 24 hours, and one week after application. The maximal concentration of the substance from breathing zone samples was 0.99 ppm (during spraying applications) with a room air exchange rate of 5 air changes per hour. At an exchange rate of 0.5 air changes per hour, the maximum concentration measured from fixed stations during roller applications was 1.96 ppm. Overall average concentrations measured in rooms with an exchange rate of 5.0 air changes per hour was only 0.44 ppm. The average concentration during spray application in a room with 0.5 air changes per hour was 0.67 ppm, and the corresponding average for roller applications was 0.37 ppm. Six hours after application, concentrations of the chemical were below the 0.33 ppm average environmental limit of detection in the rooms with an air exchange rate of 5.0 air exchanges per hour. At 24 hours, levels were below the limit level of detection of 0.19 ppm in 19 of 24 rooms (combined rooms having either 0.5 or 5.0 air changes per hour). Only one of four samples collected at 7 days contained the chemical at a concentration above the 0.01 ppm limit of detection.

OCCUPATIONAL EXPOSURE

In manufacture, dry, acid-free isobutyraldehyde is self-condensed in the presence of trace sodium isobutoxide catalyst in an enclosed, continuous manufacturing system. The product mixture is water-washed to remove the sodium salts, and then passes through distillation columns to remove the product from other substances also formed from the chemical reaction. The refined product typically assay 99.0% or higher. The process water is treated to remove essentially all remaining traces of product. The manufacturing process has various vents which release insignificant amounts of the product because of its low volatility. There are two process waste streams containing small amount of the product. These streams are incinerated.

During manufacture, fifteen one-liter samples are taken each day (347 days per year) for analysis. Thirty minutes are required to take and analyze each sample. This operation is rotated among 40 different workers per year. Some dermal exposure is possible (from spilling), but it would be slight and infrequent. During equipment maintenance, the equipment is drained free of material. Mechanics wear protective goggles and impermeable gloves; thus, dermal exposure is negligible. Some inhalation exposure may occur during drumming and loading tank cars (15 minute operations), but inhalation exposure is not appreciable, since the substance has a low vapor pressure and good ventilation is provided to the work area. Industrial hygiene monitoring of the work area indicates that the 8-hour time-weighed average air concentration of the substance is typically less than 0.5 ppm.

During processing to make plasticizer, the substance is normally stored in tanks and transported through closed lines to continuous reactors for chemical conversion. A small number of workers could be exposed for a few minutes when taking small quality control samples prior to chemical conversion. The low vapor pressure of the material minimizes the level of exposure during sampling.

Minimal exposure occurs routinely during handling of the material, since it is primarily (99%) stored in closed tanks and in closed drums. Transport is predominantly in tank cars and tank trucks.

ASSESSMENT AND CONCLUSIONS

The potential occupational exposure is low because the substance is manufactured and processed in closed continuous equipment. Inhalation exposure is further limited by the low vapor pressure of the substance. Dermal exposure could occure infrequently by accident or during quality control sampling; however, it is the practice to wear impermeable gloves and other protective clothing at points of potential exposure.

Consumer exposure is likely, since the predominant use of this substance is as a coalescing aid at up to 3% concentration in latex paints. Although the number of consumers potentially exposed is high, the level of exposure is low (average room concentration of 0.37 ppm during roller application of latex paint in a room with 0.5 room air changes per hour) during the few days per year the average consumer spends painting.

Environmental exposure occurs primarily through volatilization of the substance from drying latex paint. Terrestrial and aquatic exposure would occur rarely through spills. The substance is predicted to undergo photodecomposition slowly in the atmosphere, and does not persist elsewhere in the environment, because it biodegrades at a modest rate.

The results of the SIDS testing indicate that the substance has a relatively low order of toxicity. Because of this low level of toxicity, low level of human exposure, and lack of persistence in the environment, it is recommended that a low priority be assigned to this substance for further testing.

Production-Trade

Chemical Name : **Texanol**
CAS Number : **25265-77-4**
Geographic Area : **USA**

Production

Quantity	*Year*
44359 t - P	**1989**
25000-50000 t/y - P	

General Comments : 25000 - 50000 tonnes/year (1977 TSCA Inventory).

References

!SIDSP*
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Processes

Chemical Name : **Texanol**
CAS Number : **25265-77-4**

Process

Process comments : In manufacture, dry, acid-free isobutyraldehyde is self-condensed in the presence of trace sodium isobutoxide catalyst in an enclosed, continuous manufacturing system. The product mixture is water-washed to remove the product from other substances also formed from the chemical reaction. The refined product typically assays 99.0% or higher. The process water is treated to remove essentially all remaining traces of product. The manufacturing process has various vents which release insignificant amounts of the product because of its volatility.

References

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Uses

Chemical Name : **Texanol**
CAS Number : **25265-77-4**
Geographic Area : **USA**

Use

Quantity	*Year*	*Comments*
84 %		Approximately 84% of the material is used as a coalescing aid in latex paints where it is present at about a 3% concentration.
14 %		Approximately 14% of the material is used as a chemical intermediate which is converted to other chemical substances used as plasticizers.
2 %		About 2% of the material may be used to make dyestuffs, adhesives, building material agents, detergents, cleaning agents, fertilizers, surface treatment agents, or as a solvent.

References

Secondary References : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point : **Pathway into the Environment and Environmental Fate.**
Chemical Name : **Texanol**
CAS Number : **25265-77-4**
Geographic Area : **USA**

Pathway and Transport

Pathway : **INDST**
Pathway description : Manufacturing

Quantity Transported

Medium	*to Medium*	*Quantity*	*Time*	*Year*	*to Year*
	to AIR	**3-4 t/y**			

Estimated annual release during manufacture at Eastman Chemical Company, almost entirely to air.

to AIR **25 t/y**

Release reported in the past, but is based on a calculation method used by the State of Texas that overstimates fugitive emissions. Fugitive emissions will be determined again in 1993.

General Comments : Environmental release during customer processing is also estimated to be low due to low vapour pressure and processing in closed equipment. Actual environmental release data for customers who process the test material are not available. Since 84% of this material is used as a coalescing aid for latex paints, and is expected to evaporate during enduse, this atmospheric release will be the major environmental release for this product. It is not expected that this release will be concentrated in any particular geographic area or any specific timeframe, and environmental concentrations in any locality are expected to be negligible.

References

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point	:	**CONCENTRATION**
Chemical Name	:	**Texanol**
CAS Number	:	**25265-77-4**
Geographic Area	:	**USA**

Test Subject

Organism	*Medium*	*Specification*	*Lifestage*	*Sex*
HUMAN	**AIR**	**OCC**	**ADULT**	

Test Method and Conditions

Test method description : Estimation of exposure, National Paint and Coatings Association Study

Test Results

Matrix *Concentrations* *Spec.* *Date*

0.99 ppm

The maximal concentraion of this material from breathing zone samples (during applications) with a room air exchange rate of 5 air changes per hour.

1.96 ppm

The maximum concentration measured from fixed stations during roller applications, at an exchange rate of 0.5 air changes per hour.

0.44 ppm

Overall average concentrations measured in rooms with an exchange rate of 5.0 air changes per hour.

0.67 ppm

The average concentration during spray application in a room with 0.5 air changes per hour.

0.37 ppm

The averge concentration during roller applications in a room with 0.5 air changes per hour.

<0.33 ppm

Six hours after application, test chemical concentrations were below the 0.33 ppm average environmental limit of detection in the rooms with an air exchange rate of 5.0 air exchanges per hour.

<0.19 ppm

At 24 hours, levels were below the limit level of detection of 0.19 ppm in 19 of 24 rooms.

>0.01-0.01 ppm

Only one of four samples collected at 7 days contained the test amterial at a concentration above the 0.01 ppm limit of detection.

General Comments : Airborne concentrations of texanol were measured in a study conducted to characterize workers and consumer exposure to volatile components during field application and subsequent drying of water based polyvinyl acetate paints. Paints were applied using airless spraying or roller/brush methods in rooms having either 0.5 or 5.0 air changes per hour. For each scenario, a personal breathing zone air sample was collected during application, and fixed station air samples were collected during application and 6 hours, 24 hours, and one week after application.

References

Primary Reference : **ITCEV***
Kominsky, J. R. and Freyberg, R. W. International Technology Corporation Exposure to Volatile Compounds of Polivinyl Acetate (PVA) Emulsion Paints During Application and Drying : Report, (1992)

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point : **CONCENTRATION**
Chemical Name : **Texanol**
CAS Number : **25265-77-4**
Study type : **LAB**
Geographic Area : **USA**

Test Subject

Organism	*Medium*	*Specification*	*Lifestage*	*Sex*
HUMAN	**AIR**	**OCC**		

Species/strain/system : Work area

Test Method and Conditions

Test method description : Monitoring study

Test Results

Matrix	*Concentrations*	*Spec.*	*Date*
AIR	**<0.5 ppm**		

Industrial hygiene monitoring of the work area indicates that the 8-hour time-weighed average air concentration of the substance is typically less than 0.5 ppm.

References

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point	:	**HUMAN INTAKE AND EXPOSURE**
Chemical Name	:	**Texanol**
CAS Number	:	**25265-77-4**
Geographic Area	:	**USA**

Test Subject

Organism	*Medium*	*Specification*	*Route*	*Lifestage*	*Sex*
	AIR	**OCC**	**IHL**	**ADULT**	

Test Method and Conditions

Test method description	:	A quantitative potential inhalation dose may be derived using the equation (see comments) from a 1991 letter and an accompanying document entitled "Screening Level Exposure Assessments" from E. F. Bryan, USEPA to OECD Directorate.

Test Results

General Comments	:	PDR = Conc x IH x Dur x Freq, in which: PDR = Active inhalation potential dose rate (mg/year); Conc = Average air concentration (mg/m3); IH = Inhalation rate: 1.3 m3/hour, cited in above document; Dur = Duration of exposure (hour/day) ; and Freq = Frequency of expsure (days/year). For a commercial painter working 8 hours/day, 235 days/year, applying latex paint containing 3% of the test chemical in a room with 0.5 air changes per hour using the spray method (average concentration 0.67 ppm or 5.92 mg/m3), an annual worst-case dose may also be calculated.

References

Secondary Reference	:	**!SIDSP*** OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point	:	**HUMAN INTAKE AND EXPOSURE**
Chemical Name	:	**Texanol**
CAS Number	:	**25265-77-4**
Geographic Area	:	**USA**

Test Subject

Organism	*Medium*	*Specification*	*Route*	*Lifestage*	*Sex*
	AIR	**OCC**	**IHL**	**ADULT**	

Test Results

General Comments : During processing to make plasticizer, the substance is normally stored in tanks and transported through closed lines to continuous reactors for chemical conversion. A small number of workers could be exposed for a few minutes when taking small quality control samples prior to chemical conversion. The low vapour pressure of the material minimizes the level of exposure during sampling. Minimal exposure occurs during handling of the material, since it is primarily (99 %) stored in closed tanks and in closed drums. Transport is predominantly in tank cars and tank trunks. The primary exposure to this substance is during its end use in latex paint, during application and subsequent drying of the paint. It is recommended that exposure assessment for this chemical be centered on this exposure point.

References

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point : **HUMAN INTAKE AND EXPOSURE**
Chemical Name : **Texanol**
CAS Number : **25265-77-4**
Geographic Area : **USA**

Test Subject

Organism	*Medium*	*Specification*	*Route*	*Lifestage*	*Sex*
	-		**SKN**	**ADULT**	
	AIR		**IHL**		

Test Results

General Comments : During manufacture, fifteen one-liter samples are taken each day (347 days per year) for analysis. Thirty minutes are required to take and analyze each sample. This operation is rotated among 40 different workers per year. Some dermal exposure is possible (from spilling), but it would be slight and infrequent. During equipment maintenance, the equipment is drained free of material. Mechanics wear protective goggles and impermeable gloves; thus, dermal exposure is negligible. Some inhalation exposure may occur during drumming and loading tank cars (15 minutes operations) , but inhalation exposure is not appreciable, since the substance has a low vapour pressure and good ventilation is provided to the work area.

References

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point	:	**BIODEGRADATION**
Chemical Name	:	**Texanol**
CAS Number	:	**25265-77-4**
Study type	:	**LAB**
Geographic Area	:	**USA**

Test Subject

Organism	*Medium*	*Specification*
	AQ	**SLUDG**

Species/strain/system : Sludge from secondary effluent derived from a commercial waste treatment plant.

Test Substance

Purity Grade : **99%**

Test Method and Conditions

Test method description : OECD Guideline 301 E (EEC/Annex V, Test C.3); GLP: yes

(An)aerobic : **AEROB**

Test Results

Quantity	*Time*	*Comments on result*
10 %	**9 d**	Degradation on day 9
33 %	**19 d**	Degradation (by extrapolation) on day 19
70 %	**34 d**	Degradation on day 34
90 %	**42 d**	Degradation on day 42, when the test was terminated

General Comments : The data indicate that 33% of the material degrades in the 10-day time window in which 70% degradation must occur in order for the chemical to be classified as readily biodegradable. 70% biodegradation did not occur until day 34. The results of this test indicate, however, that the test material is unlikely to persist in the environment, but may not be fully removed during wastewater treatment.

References

Primary Reference : **#URKOD***
Waston, H. M. Eastman Kodak Company Reports, ES-91-020, (1991)

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point	:	**BIODEGRADATION**
Chemical Name	:	**Texanol**
CAS Number	:	**25265-77-4**
Study type	:	**LAB**
Geographic Area	:	**USA**

Test Subject

Organism	*Medium*	*Specification*
MCR	**AQ**	**SLUDG**

Species/strain/system : Acclimated sludge; secondary aeration basins of the Eastman Kodak Company Waste Water Treatment Plant in Rochester, New York.

Test Substance

Purity Grade : **99%**

Test Method and Conditions

Test method description : Eastman Kodak Company, Health and Environment Laboratories Protocol; GLP: yes

(An)aerobic : **AEROB**

Exposure

Exposure Period : **21 d**

Exposure comments : A 21-day biodegradation test was conducted utilizing two sources of acclimated sludge microorganisms. Acclimated organisms were used as the source of inoculum for biodegradation testing. (See general comments).

Test Results

Quantity	*Time*	*Comments on result*
57 %	**11 d**	The extent of degradation of the test material, measured by carbon dioxide evolution, using microorganisms acclimated for 11 days in a single acclimation flask without the transfer of microorganisms.
19 %		The extent of degradation using the transfer flask procedure

General Comments : In one procedure, microorganisms were acclimated over a 21-day period by making a series of adaptive transfers to increasing concentrations of the test chemical through a series of nine acclimation flasks. In the second procedure, microorganisms were acclimated for 11 days in a single acclimation flask without transfer of organisms. Based on the results of this test, the material is classified as moderately biodegradable. All material would utimately be biodegraded.

References

Primary Reference : **#URKOD***
Waston, H. M. Eastman Kodak Company Reports, ES-85-011, (1986)

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point	:	**PHOTODEGRADATION**
Chemical Name	:	**Texanol**
CAS Number	:	**25265-77-4**
Study type	:	**FIELD**
Medium	:	**AIR**
Geographic Area	:	**USA**

Test Results

Quantity	*Time*	*Comments on result*
50 %	**400 h**	Approximate photodegradation half-life.

General Comments : The end use of approximately 84% of the substance is a coalescing agent at up to 3% in latex paints. The substance enters the atmosphere during application and drying of paint through evaporation, is dispersed and undergoes photodegradation.

References

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point	:	**PHOTODEGRADATION**
Chemical Name	:	**Texanol**
CAS Number	:	**25265-77-4**
Medium	:	**AIR**
Geographic Area	:	**USA**

Test Method and Conditions

Test method description : Estimation method: Handbook of Chemical Property Estimation Methods

Test Results

General Comments : Texanol does not absorb wavelengths of light above 290 nm and thus will not be susceptible to direct (uncatalyzed) photodegradation. The reaction of this material with hydroxide radical (OH.) will be the only significant process by which this material would be removed from the atmospheric environment. The following estimate can be made for the atmospheric residence time: T(OH.) = 1 / K(OH.)(OH.) K(OH.) = 2.3E+12 cm3.mole-1.sec-1 (value for 2,2,4-trimethylpentane) and (OH.) = 3E-19 mole.cm3 (conservative value for Northern Hemisphere) Thus, T(OH.) = 1 / (2.3E+12)(3E-19) seconds or 403 hours.

References

Primary Reference : **HBCPM***
Lyman, W. J. et al. Handbook of Chemical Property Estimation Methods, Chapter 10, (1982)

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point	:	**HYDROLYSIS**
Chemical Name	:	**Texanol**
CAS Number	:	**25265-77-4**
Study type	:	**LAB**
Medium	:	**AQ**
Geographic Area	:	**USA**

Test Substance

Purity Grade	:	**99%**

Test Method and Conditions

Test method description	:	OECD Guideline 111 (EEC/Annex. V, Test C.10); GLP: yes. Data obtained from the tests, were analyzed using Arrhenius relationship to calculate rate constants and half-lives.
Temperature	:	**25 c**
pH	:	**9**

Exposure

Dose / Concentration	:	The hydrolysis of both isomers was determined. Based on the results of the preliminary test, further testing was conducted at pH 9. The data from tests conducted at 50C, pH 9 provided hydrolysis profiles which (see general comments).

Test Results

Quantity	*Time*	*Comments on result*
50 %	**396 h**	Calculated half-life for one of the isomers at 25C and pH 9
50 %	**103 h**	Calculated half-life for the second isomer at 25C and pH 9

General Comments : Closely resembled first-order kinetics.

References

Primary Reference : **#URKOD***

Roser, K. S. Eastman Kodak Company Reports, 3VC3P43, (1992)

Secondary Reference : **!SIDSP***

OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point	:	**BIOCONCENTRATION**
Chemical Name	:	**Texanol**
CAS Number	:	**25265-77-4**
Geographic Area	:	**USA**

Test Results

General Comments	:	Bioaccumulation data is not required because the substance biodegrades moderately rapid.

References

Secondary Reference	:	**!SIDSP*** OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

[redacted]

End Point : **MAMMALIAN ACUTE TOXICITY**
Chemical Name : **Texanol**
CAS Number : **25265-77-4**

Species/strain/system : Sprague-Dawley rats
Frequency : **1 x**
Dose / Concentration : **3200 mg/kg BW**

Test Method and Conditions

Test method description : Eastman Kodak Company Health and Environment Laboratories Protocol similar to OECD Guideline 401; GLP: yes. Purity: 99%

Test Results

Organism	*Medium*	*Spec.*	*Route*	*Lifestage*	*Sex*	*Effect*	*Effect Comments*
RAT			**ORL**		**M F**	**LD50**	Oral LD50 for rats was refered as >3200 mg/kg body weight.

General Comments : Fasted animals (4/dose) were administered the neat material by gavage at doses of 1600 mg/kg and 3200 mg/kg. Slight transient weakness between one and four hours after dosing with 3200 mg/kg was the only clinical abnormality observed. There was no mortality. Prior studies in which limited numbers of rats were administered the test chemical either neat on as a 10% solution in corn oil yielded approximate LD50 values of 3200-6400 or 1600-3200 mg/kg.

References

Primary Reference : **#URKOD***
O'Donoghue, J. L. Eastman Kodak Company Reports, TX-84-35, (1984)

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

[redacted]

End Point : **MAMMALIAN ACUTE TOXICITY**
Chemical Name : **Texanol**
CAS Number : **25265-77-4**

Species/strain/system : Carworth-Wistar rats
Frequency : **1 x**
Dose / Concentration : **6.86 mg/kg BW**

Test Method and Conditions

Test method description : Mellon Institute Protocol; GLP: no (Test predates GLP).

Test Results

Organism	*Medium*	*Spec.*	*Route*	*Lifestage*	*Sex*	*Effect*	*Effect Comments*
RAT			**ORL**			**LD50**	The single oral LD50 for rats was determined to be 6.86 mL/kg (6517 mg/kg). The 95% confidence interval was 4.64 - 10.1 mL/kg (4410 - 9595 mg/kg).

References

Primary Reference : **TXAPA9**
Carpenter, C. P. et al. Toxicology and Applied Pharmacology, 28, 313-319, (1974)

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point : **MAMMALIAN ACUTE TOXICITY**
Chemical Name : **Texanol**
CAS Number : **25265-77-4**

Species/strain/system : Strain not identified
Frequency : **1 x**
Dose / Concentration : **1600-3200 mg/kg BW**

Test Method and Conditions

Test method description : Eastman Kodak Company Laboratory of Industrial Medicine Protocol; GLP: no (Test predates GLP).

Test Results

Organism	*Medium*	*Spec.*	*Route*	*Lifestage*	*Sex*	*Effect*	*Effect Comments*
MOUSE			**ORL**		**M**	**LD50**	Oral LD50 for male mice was determined as 1600 - 3200 mg/kg.

General Comments : The test was administered in corn oil to male mice (2/dose) at doses from 200 to 3200 mg/kg. Abnormal clinical signs observed were: weakness, rough haircoat, prostration, vasodilatation and labored respiration, primary at the highest dose. Both animals administered by the highest dose of 3200 died. All other animals survived and gained weight.

References

Primary Reference : **#URKOD***
Eastman Kodak Company Reports, (1960)

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

[redacted]

End Point	:	**MAMMALIAN ACUTE TOXICITY**
Chemical Name	:	**Texanol**
CAS Number	:	**25265-77-4**
Species/strain/system	:	Strain not identified
Dose / Concentration	:	**3550 mg/m3 AIR**

Test Method and Conditions

Test method description : Animals were exposed for 6 hours to an atmosphere generated by passing air (3.5 L/minute) through the test material heated to 100C. Eastman Kodak Company Laboratory of Industrial Medicine Protocol; GLP: no

Test Results

Organism	*Medium*	*Spec.*	*Route*	*Lifestage*	*Sex*	*Effect*	*Effect Comments*
RAT			**IHL**			**LC50**	Inhalation LC50 for rats was reported as >= 3.55 mg/L/6 h (highest concentration tested).

General Comments : Two groups of animals (3 rats/group) were exposed to nominal concentrations of either 2.73 or 3.55 mg/L. There were no abnormal clinical signs or mortality observed.

References

Primary Reference : **#URKOD***
Eastman Kodak Company Reports, (1960)

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

[redacted]

End Point	:	**MAMMALIAN ACUTE TOXICITY**
Chemical Name	:	**Texanol**
CAS Number	:	**25265-77-4**
Species/strain/system	:	Hartley guinea pigs
Exposure Period	:	**24 h**
Dose / Concentration	:	**20 mL/kg BW**

Test Method and Conditions

Test method description : Eastman Kodak Company Health and Environment Laboratories Protocol; GLP: yes. The test chemical was applied at doses of 5 mL/kg (one animal), 10 mL/kg (one animal) or 20 mL/kg (three animals) to the depilated abdomens of guinea pigs under an occlusive wrap for 24 hours. Animals were observed for 14 days following dosing.

Test Results

Organism	*Medium*	*Spec.*	*Route*	*Lifestage*	*Sex*	*Effect*	*Effect Comments*
GPIG			**SKN**			**LD50**	Dermal LD50 for guinea pigs was reported as >20 mL/kg (highest dose tested).

General Comments : Administration of the test material at applied doses did not cause systemic toxicity or death.

References

Primary Reference : **#URKOD***
O'Donoghue, J. L. Eastman Kodak Company Reports, TX-84-35, (1984)

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point : **MAMMALIAN ACUTE TOXICITY**
Chemical Name : **Texanol**
CAS Number : **25265-77-4**

Species/strain/system : New Zealand rabbits
Exposure Period : **24 h**
Dose / Concentration : **16 mL/kg BW**

Test Method and Conditions

Test method description : The test chemical was applied to the skin under an impervious plastic film for 24 hours. Animals were observed for 14 days following dosing. Melon Institute Protocol; GLP: no. (Test predates GLP).

Test Results

Organism	*Medium*	*Spec.*	*Route*	*Lifestage*	*Sex*	*Effect*	*Effect Comments*
RBT			**SKN**			**LD50**	Dermal LD50 for rabbits was reported as >=16 mL/kg (15.2 g/kg).

References

Primary Reference : **TXAPA9**
Carpenter, C. P. et al. Toxicology and Applied Pharmacology, 28, 313-319, (1974)

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point : **MAMMALIAN ACUTE TOXICITY**
Chemical Name : **Texanol**
CAS Number : **25265-77-4**

Species/strain/system : Strain not identified
Dose / Concentration : **800-1600 mg/kg BW**

Test Method and Conditions

Test method description : Eastman Kodak Company Laboratory of Industrial Medicine Protocol; GLP: no (Test predates GLP).

Test Results

Organism	*Medium*	*Spec.*	*Route*	*Lifestage*	*Sex*	*Effect*	*Effect Comments*
RAT			**IPR**			**LD50**	The estimated intraperitoneal LD50 was 800-1600 mg/kg in rats administered the neat material, and 1600-3200 mg/kg in rats and mice administered the material in corn oil.

General Comments : The neat test material was administered via intraperitoneal injection into groups of rats (2/dose) at doses of 200 to 3200 mg/kg. Groups of 2 rats and 2 mice were also injected with doses of 200 to 3200 mg/kg of the test material as a 10% suspension in corn oil, clinical signs observed included weakness, rough hair coats, tremors, convulsions, prostration, loss of reflexes and vasodilatation.

References

Primary Reference : **#URKOD***
Eastman Kodak Company Reports, (1960)

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point : **MAMMALIAN TOXICITY**
Chemical Name : **Texanol**
CAS Number : **25265-77-4**
Study type : **LAB**

Test Subject

Organism	*Medium*	*Specification*	*Route*	*Lifestage*	*Sex*	*Number exposed*	*Number controls*
RAT			**ORL**		**M**	**12**	**12**
					F	**12**	**12**

Species/strain/system : Sprague-Dawley rats

Test Substance

Purity Grade : **99%**

Test Method and Conditions

Test method description : The test was conducted according to the proposed OECD Guideline for a Combined Repeat Dose and Reproductive) Developmental Toxicity Screening Test (Draft dated March 22, 1990); GLP: yes

Exposure

Exposure Period : **40-51 d**
Dose / Concentration : **100-1000 mg/kg BW/d**
Exposure comments : Groups of rats were administered the test article by gavage at dose levels of 0, 100, 300, or 1000 mg/kg/day. Males received 51 doses over 51 days. Females received between 40 and 51 doses of the test article during premating (14 days), mating (up to 14 days), pregnancy (21-22 days), and early lactation (4 days) periods.

Test Results

Organ	*Effect*	*Rev.*	*OnSet*	*Sex*	*Affected in Exposed - Controls*
	NEF				

No treatment-related mortality occurred in this study.

GIT	**EXOC**				

Clinical signs were restricted to sialorrhea observed in males from all three dose groups and females from the mid- and high-dose groups after administration of the test chemical. The post-dose sialorrhea may have been due to the taste of the test article.

	BEHAV		**4 d**		

A slight statistically significant decrease in feed consumption was noted in both male and female high-dose treatment groups at four days after the start of dosing.

	NEF				

No other feed consumption or body weight changes were noted.

KIDNY SIZE M
KIDNY STRUC

Statistically significantly heavier absolute and relative kidney weights were noted in the high-dose male rats and histopathological changes included accumulation of hyaline droplets in the mid- and high- dose males.

LIVER SIZE

Heavier absolute and relative liver weights were observed in the low-, mid-, and high-dose male and female groups.

LIVER CELL

Microscopic changes in the liver were noted in the mid- and high-dose groups and consisted of enlargement of hepatocytes surrounding the central vein (centrilobular hepatocytomegaly). The enlarged hepatocytes contained cytoplasm characterised by an eosinophilic "ground glass" appearance.

The liver changes were minor in all cases and associated with increased metabolic activity resulting from test article administration.

General Comments : The changes in the liver in the present study were considered to be associated with metabolic activation, rather than to a toxicological effect. Because the effects seen in the study were considered to be sequelae of metabolic activation (liver effects) or unique to male rats (kidney effects), the testing laboratory set the NOAEL for subchronic toxicity at 1000 mg/kg.

References

Primary Reference : **#URKOD***
Faber, W. D. and Hosenfeld, R. S. Eastman Kodak Company Reports, TX-92-57, (1992)

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point : **MAMMALIAN TOXICITY**
Chemical Name : **Texanol**
CAS Number : **25265-77-4**
Study type : **LAB**

Test Subject

Organism	*Medium*	*Specification*	*Route*	*Lifestage*	*Sex*	*Number exposed*	*Number controls*
RAT			**ORL**		**M**	**5/GROUP**	**5**
					F	**5/GROUP**	**5**

Species/strain/system : Sprague-Dawley rats

Test Substance

Purity Grade : **99%**
Vehicle - Solvent : Distilled water

Test Method and Conditions

Test method description : Eastman Kodak Company Health and Environment Laboratories Protocol, similar to OECD Guideline 407; GLP: yes. Parameters evaluated included clinical observations, body weights, feed consumption, hematology, clinical chemistry, and gross and histopathology examinations.

Exposure

Exposure Type : **SHORT**
Exposure Period : **15 d**
Dose / Concentration : **100-1000 mg/kg BW/d**
Exposure comments : Groups of rats were administered the test material at doses of 0, 100, or 1000 mg/kg/day for 11 treatments over a period of 15 days.

Test Results

Organ	*Effect*	*Rev.*	*OnSet*	*Sex*	*Affected in Exposed - Controls*
-	**BEHAV**	**RV**		**M**	
BW	**DECR**				

Tansient initial reductions in feed consumption and weight gain were observed in male rats at the 1000 mg/kg dose level.

GIT **EXOC** **RV**

Clinical abnormalities were restricted to transient sialorrhea after administration of the test chemical.

NEF

There were no biologically significant differences between groups in red blood cells, hematocrit, white blood cell count, and differential white blood cell count. There were a slightly lower hemoglobin concentration in the 100 mg/kg males, and a slightly lower platelet count in the

100 mg/kg females, but these differences were not dose related and were considered unrelated to the test chemical.

NEF

Clinical chemistries (alanine amino transferase, aspartate aminotransferase, sorbitol dehydrogenase, alkaline phosphatase, creatinine, urea nitrogen, and glucose) were not affected by exposure to the test chemical.

LIVER **SIZE**

Slight increases in absolute and relative liver weights were noted in both males and females from the 1000 mg/kg group.

NEF

Absolute and relative renal weights were comparable to controls.

KIDNY **STRUC** **M**

Histopathologic examination revealed mild changes (hyaline droplet formation, a frequently observed sex- and species- specific phenomenon) in kidneys from males at both the 100 and 1000 mg/kg dose levels.

General Comments : Based on slightly increased liver weights in females at the 1000 mg/kg dose level, the no-effect dose for the female rat was 100 mg/kg. Under the conditions of this study, a no-effect dose was not obtained for males. Liver weights were increased and hyaline droplets (a sex- and species-specific effect) were seen in the kidneys in the 1000 mg/kg males, hyaline droplets were also seen in the 100 mg/kg males.

References

Primary Reference : **#URKOD***
O'Donoghue, J. L. Eastman Kodak Company Reports, TX-84-35, (1984)

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point : **MUTAGENICITY**
Chemical Name : **Texanol**
CAS Number : **25265-77-4**
Study type : **LAB**

Test Subject

Organism	*Medium*	*Specification*	*Route*	*Lifestage*	*Sex*	*Number exposed*	*Number controls*
BACT			**VTR**				

Species/strain/system : Salmonella typhimurium TA 1535, TA 1537, TA 1538, TA 98 and TA 100

Test Substance

Purity Grade : **99%**

Test Method and Conditions

Test method description : Salmonella typhimurium assay (Ames test); GLP: yes

Exposure

Dose / Concentration : **10-3164 mg/ PLATE**
Exposure comments : The test material was tested with and without metabolic activation.

Test Results

Organ	*Effect*	*Rev.*	*OnSet*	*Sex*	*Affected in Exposed - Controls*
---	---	---	---	---	---

NEF

Negative results. No increase in revertants was noted for concentrations between 10 mg/plate and 3164 mg/plate.

CELL

Minimum concentration at wich toxicity to bacteria was observed: 3164 mg/plate with and without metabolic activation.

References

Primary Reference : **#URKOD***
Eastman Kodak Company Reports, TX-85-5, (1985)

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point : **MUTAGENICITY**
Chemical Name : **Texanol**
CAS Number : **25265-77-4**
Study type : **LAB**

Test Subject

Organism	*Medium*	*Specification*	*Route*	*Lifestage*	*Sex*	*Number exposed*	*Number controls*
MOUSE							

Species/strain/system : Swiss CD-1 mice

Test Substance

Purity Grade : **99%**

Test Method and Conditions

Test method description : Micronucleus Test; OECD Guideline 474 (limit dose of 2000 mg/kg); GLP: yes

Exposure

Dose / Concentration : **200-2000 mg/kg BW**
Exposure comments : Groups of animals were dosed with 0, 200, 1000, or 2000 mg/kg of test chemical.

Test Results

Organ	*Effect*	*Rev.*	*OnSet*	*Sex*	*Affected in Exposed - Controls*
---	---	---	---	---	---

NEF

No significant increase in micronuclei in bone marrow polychromatic erthrocytes was seen under the conditions of this assay in any dose group at any harvested time.

NEF

No effect on Mitotic Index or P/N Ratio was seen at any dose level.

2000 mg/kg produced transient acute toxicity in female mice.

General Comments : Under the conditions employed, the test article is negative in the in vivo mammalian bone marrow micronucleus assay.

References

Primary Reference : **#URKOD***
Barber, E. D. et al. Eastman Kodak Company Reports, TX-91-309, (1992)

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point : **SENSITIZATION**
Chemical Name : **Texanol**
CAS Number : **25265-77-4**
Study type : **LAB**

Test Subject

Organism	*Medium*	*Specification*	*Route*	*Lifestage*	*Sex*	*Number exposed*	*Number controls*
			SKN				

Test Substance

Purity Grade : **99%**

Test Method and Conditions

Test method description : OECD Guideline 406 (Annex) (dated 12 May, 1981). GLP: yes

Test Results

Organ	*Effect*	*Rev.*	*OnSet*	*Sex*	*Affected in Exposed - Controls*
---	---	---	---	---	---
	NEF				

Negative result for sensitization. Number of animals with skin reaction at challenge: 0. Number of animals with skin reaction in control group at challenge: 0.

General Comments : An earlier study using a standardized topical method of induction was negative for sensitization (see Eastman Kodak Company, Laboratory of Industrial Medicine Toxicity Report, Dated February 12, 1984).

References

Primary Reference : **#URKOD***
O'Donoghue, J. L. Eastman Kodak Company Reports, (1984)

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point : **IRRITATION**
Chemical Name : **Texanol**
CAS Number : **25265-77-4**
Study type : **LAB**

Test Subject

Organism	*Medium*	*Specification*	*Route*	*Lifestage*	*Sex*	*Number exposed*	*Number controls*
GPIG			**SKN**				

Species/strain/system : Hartley guinea pigs

Test Substance

Purity Grade : **99%**

Test Method and Conditions

Test method description : Eastman Kodak Company, Health and Environment Laboratories Protocol; GLP: yes

Exposure

Exposure Type : **ACUTE**
Exposure Period : **24 h**
Dose / Concentration : **5-20 mL/kg BW**
Exposure comments : Animals were administered a dose of 20 mL/kg (three animals), 10 mL/kg (one animal) or 5 mL/kg (one animal) to the depilated abdomen under an occlusive wrap for 24 hours.

Test Results

Organ	*Effect*	*Rev.*	*OnSet*	*Sex*	*Affected in Exposed - Controls*
SKIN	**IRRIT**				

Minimal irritation (slight to moderate erythema) was observed. Using the Draize method of evaluation, the maximum score in a single animals at 24 hours was 2. The average score at 24 hour was 0.7. The maximum score at 48 hours was 1. The average score at 48 hours was 0.3.

General Comments : The material was classified as a slight skin irritant.

References

Primary Reference : **#URKOD***
O'Donoghue, J. L. Eastman Kodak Company Reports, TX-84-35, (1984)

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point : **IRRITATION**
Chemical Name : **Texanol**
CAS Number : **25265-77-4**
Study type : **LAB**

Test Subject

Organism	*Medium*	*Specification*	*Route*	*Lifestage*	*Sex*	*Number exposed*	*Number controls*
GPIG			**SKN**				

Species/strain/system : Hartley guinea pigs

Test Substance

Purity Grade : **99%**

Test Method and Conditions

Test method description : Eastman Kodak Company, Health and Environment Laboratories Protocol; GLP: yes

Exposure

Exposure Type : **SHORT**
Exposure Period : **9 d**
Dose / Concentration : **0.5 mL/ ANIMAL**
Exposure comments : A group of 5 animals were repeatedly administered 0.5 mL of the test chemical topically to the clipped skin of the back for a total of nine doses over an eleven-day period. Both primary irritation and exacerbation of effects were measured.

Test Results

Organ	*Effect*	*Rev.*	*OnSet*	*Sex*	*Affected in Exposed - Controls*
-	**NEF**				
SKIN	**IRRIT**				

No irritation or exacerbation was observed at the site of application in any of the 5 treated guinea pigs during the first week of dosing. During the second week, slight, transient irritation was observed in three of five animals.

References

Primary Reference : **#URKOD***
O'Donoghue, J. L. Eastman Kodak Company Reports, TX-84-35, (1984)

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

[redacted]

End Point : **IRRITATION**
Chemical Name : **Texanol**
CAS Number : **25265-77-4**
Study type : **LAB**

Test Subject

Organism	*Medium*	*Specification*	*Route*	*Lifestage*	*Sex*	*Number exposed*	*Number controls*
RBT			**SKN**				

Species/strain/system : New Zealand rabbits

Test Method and Conditions

Test method description : Mellon Institute Protocol; GLP: no. (Test predates GLP).

Exposure

Exposure comments : The test material was placed on the clipped skin of 5 rabbits. Evaluation of irritancy was based on the severest reaction observed in the 24 hours following application.

Test Results

Organ	*Effect*	*Rev.*	*OnSet*	*Sex*	*Affected in Exposed - Controls*
SKIN	**IRRIT**				

Application of the test material resulted in an irritation score of 3 using the grading procedure used in the Federal Hazardous Substances Act method, 21CFR, Past 191.

References

Primary Reference : **TXAPA9**
Carpenter, C. P. et al. Toxicology and Applied Pharmacology, 28, 313-319, (1974)

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

[redacted]

End Point : **IRRITATION**
Chemical Name : **Texanol**
CAS Number : **25265-77-4**
Study type : **LAB**

Test Subject

Organism	*Medium*	*Specification*	*Route*	*Lifestage*	*Sex*	*Number exposed*	*Number controls*
RBT			**OCU**			**6**	

Species/strain/system : New Zealand rabbits

Test Substance

Purity Grade : **99%**

Test Method and Conditions

Test method description : Eastman Kodak Company, Health and Environment Laboratories Protocol, similar to OECD Guideline 405; GLP: yes

Exposure

Exposure Type : **ACUTE**

Exposure comments : The material was instilled into six rabbit eyes. Three eyes were washed immediately.

Test Results

Organ	Effect	Rev.	OnSet	Sex	Affected in Exposed - Controls
EYE	**IRRIT**	**RV**			

Based on moderate (grade 2) erythema of the conjunctiva, the maximum score in a single unwashed eye was 4 (of a possible score of 110) after 24 hours.

EYE **NEF**

No signs of irritation were seen in washed eyes at any time. At 48 hours, the score for all eyes was 0.

General Comments : Based on the effects observed in unwashed eyes, the material was classified as a slight to moderate eye irritant.

References

Primary Reference : **#URKOD***
O'Donoghue, J. L. Eastman Kodak Company Reports, TX-84-35, (1984)

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point : **IRRITATION**
Chemical Name : **Texanol**
CAS Number : **25265-77-4**
Study type : **LAB**

Test Subject

Organism	Medium	Specification	Route	Lifestage	Sex	Number exposed	Number controls
RBT			**OCU**				

Species/strain/system : New Zealand rabbits

Test Method and Conditions

Test method description : Mellon Institute Protocol; GLP: no. (Test predates GLP).

Test Results

Organ	*Effect*	*Rev.*	*OnSet*	*Sex*	*Affected in Exposed - Controls*
EYE	**IRRIT**				

A grade of 4 was obtained using the evaluation procedure outlined in the Federal Hazardous Substances Act, 21CFR, Part 191.

References

Primary Reference : **TXAPA9**
Carpenter, C. P. et al. Toxicology and Applied Pharmacology, 28, 313-319, (1974)

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point : **REPRODUCTION**
Chemical Name : **Texanol**
CAS Number : **25265-77-4**
Study type : **LAB**

Test Subject

Organism	*Medium*	*Specification*	*Route*	*Lifestage*	*Sex*	*Number exposed*	*Number controls*
RAT			**ORL**		**M**	**12/GROUP**	**12**
					F	**12/GROUP**	**12**

Species/strain/system : Sprague-Dawley rats

Test Substance

Purity Grade : **99%**

Test Method and Conditions

Test method description : Test was conducted according to the proposed OECD Guideline for a Combined Repeat Dose and Reproductive/Developmental Toxicity Screening Test. GLP: yes. Parameters evaluated included clinical observations, body weights, feed consumption, reproductive indices, postnatal pup observations, and gross and histopathology examinations.

Exposure

Exposure Period : **40-51 d**
Dose / Concentration : **100-1000 mg/kg BW/d**
Exposure comments : Groups of rats were administered the test article by gavage at doses of 0, 100, 300 or 1000 mg/kg/day. Females received between 40 and 51 doses during premating (14 days), mating (up to 14 days), pregnancy (21-22 days), and easy lactation (14 days) periods. All males received 51 doses over 51 days.

Test Results

Organ	*Effect*	*Rev.*	*OnSet*	*Sex*	*Affected in Exposed - Controls*
---	---	---	---	---	---

NEF

There were no toxicologically significant differences between the control and treated groups with respect to reproduction and development in male and/or female rats. Evidence for copulation was noted for a all animals.

NEF

There were no differences in the number of pregnancies, number of live or dead pups, total number of implants, prenatal loss, percent survival, total litter weight, mean pup weight, pup survival, or postnatal growth.

General Comments : Administration of the test article did not affect reproductive performance. NOEL for reproductive toxicity was 1000 mg/kg.

References

Primary Reference : **#URKOD***
Faber, W. D. and Hosenfeld, R. S. Eastman Kodak Company Reports, TX-92-57, (1992)

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point : **TERATOGENICITY**
Chemical Name : **Texanol**
CAS Number : **25265-77-4**
Study type : **LAB**

Test Subject

Organism	*Medium*	*Specification*	*Route*	*Lifestage*	*Sex*	*Number exposed*	*Number controls*
RAT			**ORL**		**M**	**12/DOSE**	**12**
					F	**12/DOSE**	**12**

Species/strain/system : Sprague-Dawley rats

Test Substance

Purity Grade : **99%**

Test Method and Conditions

Test method description : Test was conducted according to the proposed OECD Guideline for a Combined Repeat Dose and Reproductive/Developmental Toxicity Screening Test (Draft Dated March 22, 1990); GLP: yes

Exposure

Exposure Type : **SHORT**
Exposure Period : **40-51 d**
Dose / Concentration : **100-1000 mk/kg BW/d**
Exposure comments : Groups of rats were administered the test article by gavage at dose levels of 0, 100, 300, or 1000 mg/kg/day. Female rats received between 40 and 51 doses during premating (14 days), mating (up to 14 days), pregnancy (21-22 days, and early lactation (4 days) period. Males received 51 doses over 51 days.

Test Results

Organ	*Effect*	*Rev.*	*OnSet*	*Sex*	*Affected in Exposed - Controls*
	NEF				

Administration of the test article did not affect reproductive performance in terms of mean number of live or dead pups/litter, total implants, prenatal loss, percent survival, total litter weight, mean pup weight, pup survival , external defects, and postnatal growth.

Although two dams in the high-dose group had small litters, and one pregnant dam had a full term pregnancy but no pups were found, the remaining seven litters in the high dose group averaged more pups per litter than the control group. When the litter size data were ranked and analyzed, the high

-dose group of dams were also shown to have a statistically greater number of pups than the control.

General Comments : Within the design parameters of the protocol for this test, there were no toxicologically significant differences between the control and treated groups with respect to reproduction and development. The NOEL for developmental toxicity was 1000 mg/kg.

References

Primary Reference : **#URKOD***
Faber, N. D. and Hosenfeld, R. S. Eastman Kodak Company Reports, TX-92-57, (1992)

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

[redacted]

End Point : **AQUATIC ACUTE TOXICITY**
Chemical Name : **Texanol**
CAS Number : **25265-77-4**

Species/strain/system : Five species were tested; Ramshorn snail; Aquatic earthworm; Sideswimmer; Crustacea (Pillbug); Flatworm
Dose / Concentration : **9.5-95 mg/L**

Test Substance

Description of the test substance : Purity: 99%; nominal concentration of 10 uL/L - 100 uL/L of texanol in diluent water.

Test Method and Conditions

Test method description : Eastman Kodak Company, Health and Environmental Laboratories Protocol; static; GLP: yes. Temperature, dissolved oxygen and pH were measured at 0, 24, 48, 72, and 96 hours. Observations of mortality were made at 6, 24, 48, 72, and 96 hours.

Test Results

Organism	*Medium*	*Spec.*	*Route*	*Lifestage*	*Sex*	*Effect*	*Effect Comments*
SNAIL	**AQ**					**LC50**	LC50 (96 hours) for ramshorn snail; sideswimmer, and pillbug >= 95 mg/L (100 uL/L).
WORM							
CRUS							

General Comments : Number exposed: 10/dose level, control: 10. Exposure of the five species was simultaneous with two other species (daphnia and fathead minnows) in 20 L of the test solution in a 23 L cuboidal container. All species except the snails were maintained in separate wire mesh baskets. The daphnia were also maintained in a separate mesh wire basket, and fathead minnows were maintained directly in the tank.

References

Primary Reference : **#URKOD***
Ziegler, D. A. Eastman Kodak Company Reports, ES-84-109, (1985)

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

[redacted]

End Point : **AQUATIC ACUTE TOXICITY**
Chemical Name : **Texanol**
CAS Number : **25265-77-4**

Species/strain/system : Water flea (Daphnia magna)
Dose / Concentration : **9.5-95 mg/L**

Test Substance

Purity Grade : **99%**

Test Method and Conditions

Test method description : Eastman Kodak Company, Health & Environmental Laboratories Protocol: GLP: yes. Daphnia (10/dose) were exposed to nominal concs. of texanol in diluent water. Control = 10 in diluent water without the test chemical (see general comments).

Test Results

Organism	*Medium*	*Spec.*	*Route*	*Lifestage*	*Sex*	*Effect*	*Effect Comments*
CRUS	**AQ**	**FRESH**				**LC50**	LC50 >= 95 mg/L (100 uL/L).

General Comments : Exposure was simultaneous with six other species in 20 L of test solution in a 23 L cuboidal container. Daphnia were maintained in a wire mesh basket to separate them from the other species. Other species (pillbig, sideswimmer, flatworm, and aquatic earthworm) were also maintained is separate mesh wire baskets. Fathead minnows and ramshorn snails were maintained directly in the tank. Temperature, dissolved oxygen, and pH were measured at O, 24, 48, 72, and 96 hours. Observations of mortality were made at 6, 24, 48, 72 and 96 hours.

References

Primary Reference : **#URKOD***
Ziegler, D. A. Eastman Kodak Company Reports, ES-84-109, (1985)

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point : **AQUATIC ACUTE TOXICITY**
Chemical Name : **Texanol**
CAS Number : **25265-77-4**

Species/strain/system : Fathead minnow (Pimephales promelas)
Dose / Concentration : **9.5-95 mg/L**

Test Substance

Purity Grade : **99%**

Test Method and Conditions

Test method description : Eastman Kodak Company, Health & Environmental Laboratories Protocol; static; GLP: yes. The fish (10/dose) were exposed to nominal concs. of either 95 mg/L (100 uL/L) or 9.5 mg/L (10 uL/L) in diluent water (see general comments).

Test Results

Organism	*Medium*	*Spec.*	*Route*	*Lifestage*	*Sex*	*Effect*	*Effect Comments*
FISH	**AQ**	**FRESH**				**LC50**	LC50 = 30 mg/L (32 uL/L). The LC50 was calculated by non-linear interpolation.

General Comments : Ten individuals were also maintained in diluent water without the test chemical to serve as a control. Exposure was simultaneous with six other species in 20L of test solution in a 23 L cuboidal container. Other species (pillbug, sideswimmer, flatworm, aquatic earthworm, and daphnia) were maintained in separate mesh wire baskets. The minnows, together with ramshorn snails, were maintained directly in the tank. Temperature, dissolved oxygen, and pH were measured at 0, 24, 48, 72, and 96 hours. Observations of mortality were made at 6, 24, 48, 72, and 96 hours.

References

Primary Reference : **#URKOD***
Ziegler, D. A. Eastman Kodak Company Reports, ES-84-109, (1985)

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point	:	**AQUATIC TOXICITY**
Chemical Name	:	**Texanol**
CAS Number	:	**25265-77-4**
Geographic Area	:	**USA**

Evaluations

Evaluation text	:	Long-term tests e.g., reproduction: no data available. Chronic daphnia, pillbug, sideswimmer, flatworm, aquatic worm, or snail studies are not deemed necessary because substance shows low acute toxicity to these organisms.

References

Secondary Reference	:	**!SIDSP*** OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point	:	**AQUATIC TOXICITY**
Chemical Name	:	**Texanol**
CAS Number	:	**25265-77-4**
Study type	:	**LAB**
Geographic Area	:	**USA**

Test Subject

Organism	*Medium*	*Specification*	*Route*	*Lifestage*	*Sex*	*Number exposed*	*Number controls*
ALGAE	**AQ**	**FRESH**					

Species/strain/system : Algae (Selenastrum capricornutum)

Test Substance

Purity Grade : **99%**

Test Method and Conditions

Test method description : OECD Guideline 201; GLP: yes

Exposure

Exposure Period	:	**72 h**
Dose / Concentration	:	**2.5-80 mg/L**
Exposure comments	:	The test organism was exposed over a 72-hour period to six concs. (2.5-80 mg/L, nominal; 1.1 to 57 mg/L, measured) of texanol. Percent inhibition relative to control at 24, 48 and 72 hours was calculated for each (see general commnets).

Test Results

Organ	*Effect*	*Rev.*	*OnSet*	*Sex*	*Affected in Exposed - Controls*
---	---	---	---	---	---

EC50

The 72-hour EC value, based on analytically measured amounts of material, was 18.4 mg/L.

NOEC

NOEC (no observed effect concentration) at 72 hours was 3.28 g/L.

NEL

Maximum concentration at which no effect was observed within the period of the test = 3.28 mg/L.

LOEC

Minimum concentration at which effect was observed within the period of the test = 7.28 mg/L.

General Comments : concentration based upon the area under the growth curves. The test material is rated "moderately toxic" to the test species. However, since the test substance is ultimately biodegradable, if it were to reach the environment, adverse effects on algal growth are anticipated to be minimal.

References

Primary Reference : **MALPI***
Hughes, J. S. and Alexander, M. M. Malcom Pirnie. The toxicity of HAEL No 91-0053 to Selenastrum Capricornutum

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point : **AQUATIC TOXICITY**
Chemical Name : **Texanol**
CAS Number : **25265-77-4**
Study type : **LAB**
Geographic Area : **USA**

Test Subject

Organism	*Medium*	*Specification*	*Route*	*Lifestage*	*Sex*	*Number exposed*	*Number controls*
MCR	**AQ**						

Species/strain/system : Bacteria; activated sludge

Test Substance

Description of the test substance : Purity: 99%

Test Method and Conditions

Test method description : Eastman Kodak Company, Health and Environmental Laboratories Protocol; IC50; Secondary Waste Treatment; GLP: yes
Temperature : **27 C**
pH : **6.9**

Exposure

Exposure Period : **5 h**
Dose / Concentration : **0.215-215 mg/L**
Exposure comments : This test utilized secondary waste treatment micro-organisms which are characteristic of actual treatment plant sludge, and which were cultured in a continuous-flow laboratory sludge unit. (see general comments).

Test Results

Organ	*Effect*	*Rev.*	*OnSet*	*Sex*	*Affected in Exposed - Controls*
	EC50				

EC50 for inhibition >= 215 mg/L

NOAEL

Exposure to 21.5 mg/L, 2.15 mg/L, and 0.215 mg/L had no adverse effect on glucose metabolism.

General Comments : Test exposures were conducted in respirometer flasks containing the test chemical, sludge, (14C) glucose, and 0.02 M phosphate buffer, pH 6.9. The test article exposure flasks contained the test chemical at concentrations of 215 mg/L, 21.5 mg/L, 2.15 mg/L, or 0.215 mg/L. The negative control exposure flasks contained K2Cr2O7 at 333, 167, 33, and 3.3 mg/L. All exposures were performed simultaneously and in triplicate; with gentle shaking.

References

Primary Reference : **#URKOD***
Ziegler, D. A. Eastman Kodak Company Reports, ES-84-109, (1985)

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point : **TERRESTRIAL TOXICITY**
Chemical Name : **Texanol**
CAS Number : **25265-77-4**
Geographic Area : **USA**

Test Subject

Organism	*Medium*	*Specification*	*Route*	*Lifestage*	*Sex*	*Number exposed*	*Number controls*
BIRD							

General Comments : No data available. This material is manufactured and used in such a way that significant exposure of avian life to appreciable concentrations of this substance is deemed remote.

References

Secondary Reference : **!SIDSP***
OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)

Study

End Point	:	**TERRESTRIAL TOXICITY**
Chemical Name	:	**Texanol**
CAS Number	:	**25265-77-4**
Study type	:	**LAB**
Geographic Area	:	**USA**

Test Subject

Organism	*Medium*	*Specification*	*Route*	*Lifestage*	*Sex*	*Number exposed*	*Number controls*
PLANT	**TERR**					**4x20/TYPE**	

Species/strain/system : Ryegrass (Lolium perene); Radish (Raphanus sativus); Lettuce (Lactuca sativa)

Test Substance

Description of the test substance : 95 mg/L (100 uL/L)

Purity Grade : **99%**

Test Method and Conditions

Test method description : Eastman Kodak Company, Health and Environment Laboratories Protocol; GLP: yes. End points: plant height, root length, and germination.

Exposure

Dose / Concentration : **95 mg/L**

Exposure comments : Four replicates of twenty radish, lettuce, and ryegrass seeds were dispersed in growth pouches (a total of 80 seeds for each type of plant). 20 mL of test chemical at a nominal conc. of 95 mg/L (100 uL/L) was added to (see general comments)

Test Results

Organ	*Effect*	*Rev.*	*OnSet*	*Sex*	*Affected in Exposed - Controls*
---	---	---	---	---	---

NOEC

Maximum concentration at which no effect was observed within the period of the test: no effect was seen at 95 mg/L (100 uL/L) in any of the species tested (7 days).

LOEC

Minimum (lowest) concentration at which effect was observed within the period of the test: not observed. Plants were exposed only to a concentration of 95 mg/L (100 uL/L).

General Comments : Each growth pouch, and pouches were placed in a light-tight chamber for seven days at room temperature. Criteria for inhibition were values of less than 90% of the concurrent control group for any of the three end points.

References

Primary Reference : **#URKOD***

Ziegler, D. A. Eastman Kodak Company Reports, ES-84-109, (1985)

Secondary Reference : **!SIDSP***

OECD/SIDS. Screening Information Data Set (SIDS) of OECD High Production Volume Chemicals Programme, (1994)