

# SAFETY DATA SHEET

Version: 1.0

Date of Issue: 10 May 2018

Date of First Issue: 10 May 2018

www.vishaypg.com

In accordance with Schedule 1 of Hazardous Products Regulations (HPR) (WHMIS 2015)

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### Product identifier

Product Name

M-Line Rosin Solvent

Other Means of Identification

None

### Recommended use and restrictions

Recommended use

PC38 Welding and soldering products (with flux coatings or flux cores.), flux products

Restrictions on use

Anything other than the above.

### Initial Supplier Identifier

Company Identification

VISHAY MEASUREMENTS GROUP, INC.

Telephone

Post Office Box 27777

Raleigh, NC 27611

USA

E-Mail (competent person)

[mm.us@vishaypg.com](mailto:mm.us@vishaypg.com)

### Emergency telephone number

Emergency Phone No.

1-800-424-9300

CHEMTREC (24 hours)

Languages spoken

English

## SECTION 2: HAZARDS IDENTIFICATION

### Classification of the substance or mixture

In accordance with Schedule 1 of Hazardous Products Regulations (HPR) (WHMIS 2015)

Flammable Liquid - Category 3

Aspiration hazard - Category 1

Skin corrosion/irritation - Category 2

Eye Irritation - Category 2

Specific target organ toxicity — single exposure, Category 3

Specific target organ toxicity — repeated exposure, Category 2

Reproductive toxicity - Category 2

Aquatic toxicity, Chronic - Category 3

### Label elements

Hazard Pictogram(s)



Signal Word(s)

DANGER

Hazard Statement(s)

Highly flammable liquid and vapour.

May be fatal if swallowed and enters airways.

Causes skin irritation.

Causes serious eye irritation.

May cause drowsiness or dizziness.

May cause damage to organs through prolonged or repeated exposure.

Suspected of damaging the unborn child.

Precautionary Statement(s)

Obtain special instructions before use.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Keep container tightly closed.

Do not breathe vapour.

Wash hands and exposed skin thoroughly after handling.

# SAFETY DATA SHEET

Version: 1.0

Date of Issue: 10 May 2018

Date of First Issue: 10 May 2018

www.vishaypg.com

In accordance with Schedule 1 of Hazardous Products Regulations (HPR) (WHMIS 2015)

Wear protective gloves/protective clothing/eye protection/face protection.  
Do not breathe dust/fume/gas/mist/vapours/spray.  
Do NOT induce vomiting.  
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
Do NOT induce vomiting.  
Call a POISON CENTER/doctor if you feel unwell.  
Store in a well-ventilated place. Keep cool.  
Dispose of contents in accordance with local, state or national legislation.

Other hazards

None

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substances Not applicable

Mixtures

GHS Classification

Chemical Name	CAS No.	Concentration (%W/W)	Common name(s), synonym(s) of the substance	Hazard classification
Toluene	108-88-3	30 - 60	Methylbenzene	Flammable Liquid - Category 2 Skin corrosion/irritation - Category 2 Aspiration hazard - Category 1 Specific target organ toxicity — single exposure - Category 3 (Narcosis/Central nervous system) Specific target organ toxicity — repeated exposure - Category 2 Reproductive toxicity - Category 2 Aquatic toxicity, Chronic - Category 3
2-Propanol	67-63-0	30 - 60	Isopropanol; Isopropyl alcohol	Flammable Liquid - Category 2 Eye Irritation - Category 2 Specific target organ toxicity — single exposure - Category 3 (Narcosis/Central nervous system)

Prescribed Concentration Ranges used for trade secret purposes (Canada Gazette, Part II, Vol. 152, No. 8)

## SECTION 4: FIRST AID MEASURES



### Description of first aid measures

Self-protection of the first aider

Inhalation

Skin Contact

Use personal protective equipment as required. Wear appropriate personal protective equipment, avoid direct contact. Avoid all contact. Avoid breathing vapours. Ensure adequate ventilation. Wear suitable respiratory protective equipment if exposure to high levels of material are likely. Do not use mouth-to-mouth resuscitation. Contaminated clothing should be laundered before reuse.  
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. IF exposed or concerned: Get medical advice/attention.  
IF ON SKIN: Remove contaminated clothing and wash all affected areas with plenty of water. Contaminated clothing should be thoroughly cleaned. If skin

# SAFETY DATA SHEET

Version: 1.0

Date of Issue: 10 May 2018

Date of First Issue: 10 May 2018

www.vishaypg.com

In accordance with Schedule 1 of Hazardous Products Regulations (HPR) (WHMIS 2015)

Eye Contact	irritation occurs: Get medical advice/attention. IF exposed or concerned: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if eye irritation develops or persists.
Ingestion	IF SWALLOWED: Do NOT induce vomiting. Immediately call a POISON CENTER/doctor. Rinse mouth. Drink two glasses of water. Do not give milk or alcoholic beverages. Do not give anything by mouth to an unconscious person.
<b>Most important symptoms and effects, both acute and delayed</b>	May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause drowsiness or dizziness. Suspected of damaging the unborn child. May cause damage to organs through prolonged or repeated exposure: Central nervous system.
<b>Indication of any immediate medical attention and special treatment needed</b>	Treat symptomatically. IF SWALLOWED: Do NOT induce vomiting, if vomiting does occur, have victim lean forward to reduce risk of aspiration. Latency of several hours is possible. Give a slurry of activated charcoal in water to drink. (240mL Water / 30 g Activated charcoal).

## SECTION 5: FIRE-FIGHTING MEASURES

### Extinguishing media

Suitable Extinguishing Media

As appropriate for surrounding fire. Extinguish preferably with foam, carbon dioxide or dry chemical.

Unsuitable extinguishing Media

Do not use water jet. Direct water jet may spread the fire.

### Special hazards arising from the substance or mixture

Highly flammable liquid and vapour. May decompose in a fire giving off toxic fumes. Oxides of carbon. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback. In confined spaces, sewers, etc., the vapours may collect to form explosive mixtures with air.

### Special protective equipment and precautions for fire fighters

Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Do not breathe fumes. Keep containers cool by spraying with water if exposed to fire. Avoid run off to waterways and sewers.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

Caution - spillages may be slippery. Ensure operatives are trained to minimise exposures. Ensure suitable personal protection during removal of spillages. Ensure adequate ventilation. Stop leak if safe to do so. Eliminate all ignition sources if safe to do so. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Use personal protective equipment as required. See Section: 8. Avoid breathing vapours.

### Environmental precautions

Avoid release to the environment. Do not allow to enter drains, sewers or watercourses.

### Methods and material for containment and cleaning up

Provided it is safe to do so, isolate the source of the leak. Use non-sparking equipment when picking up flammable spill. Adsorb spillages onto sand, earth or any suitable adsorbent material. Transfer to a container for disposal. Ventilate the area and wash spill site after material pick-up is complete. Dispose of this material and its container as hazardous waste. Allow small spillages to evaporate provided there is adequate ventilation.

### Reference to other sections

See Section: 8, 13

## SECTION 7: HANDLING AND STORAGE

### Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Ensure operatives are trained to minimise exposures. Avoid all contact. Avoid breathing vapours. Do not ingest. Ensure adequate ventilation. In case of inadequate ventilation wear respiratory protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge.

# SAFETY DATA SHEET

Version: 1.0  
Date of Issue: 10 May 2018  
Date of First Issue: 10 May 2018

www.vishaypg.com

In accordance with Schedule 1 of Hazardous Products Regulations (HPR) (WHMIS 2015)

**Conditions for safe storage, including any incompatibilities**

Storage temperature  
Incompatible materials

**Specific end use(s)**

Wear protective gloves/eye protection. Use personal protective equipment as required. See Section: 8. This product should be kept away from naked flames and other sources of ignition. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work.

Ground/bond container and receiving equipment. Bund storage facilities to prevent soil and water pollution in the event of spillage. Store in a well-ventilated place. Keep container tightly closed. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep away from direct sunlight. Store locked up.

Ambient. Keep at temperature not exceeding (°C): 25  
Strong oxidising agents, Acids (Nitric acid and Sulphuric acid), Aluminium, Halogens and halogenated compounds.  
See Section: 1.2

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**

**Occupational Exposure Limits**

SUBSTANCE	CAS No.	ACGIH® TLV® (ppm)		OSHA PEL (ppm)		Note
		TWA	STEL	TWA	STEL	
Toluene	108-88-3	20	-	200	300	A4
2-Propanol	67-63-0	200	400	400	980 mg/m <sup>3</sup>	A4

Source: ACGIH: American Conference of Governmental Industrial Hygiene. TLV: Threshold Limit Value (ACGIH) PEL (OSHA)

A4: Not Classifiable as a Human Carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of the lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories.

**Alberta: Occupational Health And Safety Code, 2009; Quebec: Health and Safety Work Act, 2016**

SUBSTANCE	CAS No.	8-hour Occupational Exposure Limits			15-minute or ceiling (c) Occupational Exposure Limits		Note
		ppm	mg/m <sup>3</sup>	f/cc	STEL (ppm)	STEL (mg/m <sup>3</sup> )	
Toluene	108-88-3	50	188	-	-	-	Alberta, 1
		50	188	-	-	-	OEL
2-Propanol	67-63-0	200	492	-	400	984	Alberta
		400	983	-	500	1230	OEL

Source: Alberta: Occupational Health And Safety Code, 2009

OEL: Quebec Work Health and Safety Regulations, Health and Safety Work Act, (Chapter S – 2.1, a. 223)

1: Can be readily absorbed through intact skin.

**British Columbia: Occupational Health and Safety Guidelines, 2015; Northwest Territories: Occupational Health and Safety Regulations, 2012; Yukon Territory: Occupational Health and Safety Act, 1986**

SUBSTANCE	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m <sup>3</sup> )	STEL (ppm)	STEL (mg/m <sup>3</sup> )	Note
Toluene	108-88-3	20	-	-	-	WEL
		50	-	60	-	NW, Sk
		100	375	-	-	YK
2-Propanol	67-63-0	200	-	400	-	WEL
		200	-	400	-	NW

Source: WEL: Occupational Health and Safety Guidelines Part 5: Chemical Agents and Biological Agents (British Columbia)

NW: WSCC, Occupational Health and Safety Regulations, Northwest Territories Volume 3

Yukon Territory (YK): Occupational Health and Safety Act. O.I.C. 1986/164 Occupational Health Regulations.

Sk - Can be absorbed through skin.

**Ontario: Occupational Health and Safety Act, 1990; Saskatchewan: Occupational Health and Safety Regulations, 1996.**

# SAFETY DATA SHEET

Version: 1.0

Date of Issue: 10 May 2018

Date of First Issue: 10 May 2018

www.vishaypg.com

In accordance with Schedule 1 of Hazardous Products Regulations (HPR) (WHMIS 2015)

SUBSTANCE	CAS No.	Time Weighted Average (TWA)	STEL (ppm)	Note
Toluene	108-88-3	-	20	WEL
2-Propanol	67-63-0	200	400	WEL
		200	400	SK

Source: WEL: Occupational Health and Safety Act, R.R.O. 1990, Regulation 833, CONTROL OF EXPOSURE TO BIOLOGICAL OR CHEMICAL AGENTS (Ontario)

Saskatchewan (SK): Occupational Health and Safety Act, 1993. O-1.1 REG 1 Occupational Health and Safety Regulations, 1996.

## Biological limit value

SUBSTANCE	CAS No.	Biological exposure determinant factors	Biological Exposure Indices	Sampling Time	Note
Toluene	108-88-3	Toluene: Blood	0.02 mg/L	Prior to last shift of workweek	-
		Toluene: Urine	0.03 mg/L	End of Shift	-
		o-Cresol: Urine <sup>^</sup>	0.3 mg/g Creatinine	End of Shift	1
2-Propanol	67-63-0	Acetone: Urine	40 mg/L	End of Shift: end of workweek	Ns, 1

Source: 2015 ACGIH Biological Exposure Indices (BEIs)

1: Background level

Ns - Nonspecific

<sup>^</sup> Hydrolysis

## Exposure controls

### Appropriate engineering controls

Ensure operatives are trained to minimise exposures. Ensure adequate ventilation. Atmospheric levels should be controlled in compliance with the occupational exposure limit.

### Individual protection measures, such as personal protective equipment (PPE)

Keep good industrial hygiene. Wear appropriate personal protective equipment, avoid direct contact. General hygiene measures for the handling of chemicals are applicable. Avoid all contact. Avoid breathing vapours. Wash hands before breaks and after work. Keep work clothes separately. Do not eat, drink or smoke at the work place.

#### Eye/face protection



Wear protective eye glasses for protection against liquid splashes. Wear eye protection with side protection.

#### Skin protection



#### Hand protection:

Wear impervious gloves. At least protective index 2, corresponding > 30 minutes of permeation time. Gloves should be changed regularly to avoid permeation problems. Breakthrough time of the glove material: refer to the information provided by the gloves' producer. Recommended: Nitrile rubber (Minimum thickness 0.38mm, breakthrough time >240 min), PVC (Minimum thickness 1.3mm, breakthrough time >60 min)

#### Respiratory protection



#### Body protection:

Wear impervious protective clothing, including boots, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

In case of inadequate ventilation wear respiratory protection. Open system(s): Wear suitable respiratory protective equipment. A suitable mask with filter type A may be appropriate.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

# SAFETY DATA SHEET

Version: 1.0  
Date of Issue: 10 May 2018  
Date of First Issue: 10 May 2018

www.vishaypg.com

In accordance with Schedule 1 of Hazardous Products Regulations (HPR) (WHMIS 2015)

Appearance	Clear Colourless Liquid
Odour	Benzene-like Odour
Odour threshold	Not available.
pH	Not established.
Melting point/freezing point	Not established.
Initial boiling point and boiling range	82°C
Flash point	4°C [Closed cup]
Evaporation rate (Water = 1)	2.8 (BuAC = 1)
Flammability (solid, gas)	Not applicable - Liquid
Upper/lower flammability or explosive limits	Flammable Limits (Lower) (%v/v): 1.2 Flammable Limits (Upper) (%v/v): 7.1
Vapour pressure	36 mmHg @ 30°C
Vapour density	3 (Air = 1)
Relative density	0.8 (H <sub>2</sub> O = 1)
Solubility(ies)	Not established.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	Not available.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

#### Other information

Volatile Organic Compound Content: 825 g/L

## SECTION 10: STABILITY AND REACTIVITY

<b>Reactivity</b>	Stable under normal conditions.
<b>Chemical stability</b>	Stable under normal conditions.
<b>Possibility of hazardous reactions</b>	Highly flammable liquid and vapour. Danger of flashback. Hazardous polymerisation will not occur.
<b>Conditions to avoid</b>	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep away from direct sunlight. Keep at temperature not exceeding (°C): 25
<b>Incompatible materials</b>	Strong oxidising agents, Acids (Nitric acid and Sulphuric acid), Aluminium, Halogens and halogenated compounds.
<b>Hazardous decomposition product(s)</b>	May decompose in a fire giving off toxic fumes. Oxides of carbon.

## SECTION 11: TOXICOLOGICAL INFORMATION

<b>Information on toxicological effects</b>	
<b>Acute toxicity - Ingestion</b>	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.
<b>Acute toxicity - Inhalation</b>	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 20.0 mg/l.
<b>Acute toxicity - Skin Contact</b>	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.
<b>Skin corrosion/irritation</b>	Skin corrosion/irritation - Category 2: Causes skin irritation.
Toluene	Skin corrosion/irritation - Category 2 Irritating to skin. (rabbit) (EU Method B.4)
<b>Serious eye damage/irritation</b>	Eye Irritation - Category 2: Causes serious eye irritation.
2-Propanol	Eye Irritation - Category 2 Irritating to eyes. (rabbit) (OECD 405)
<b>Respiratory or skin sensitization</b>	Based upon the available data, the classification criteria are not met.
<b>Germ cell mutagenicity</b>	Based upon the available data, the classification criteria are not met.
<b>Carcinogenicity</b>	Based upon the available data, the classification criteria are not met.
<b>Reproductive toxicity</b>	Reproductive toxicity - Category 2: Suspected of damaging the unborn child.
Toluene	Reproductive toxicity - Category 2 NOAEC 600 ppm (Ono, 1996)

# SAFETY DATA SHEET

Version: 1.0

Date of Issue: 10 May 2018

Date of First Issue: 10 May 2018

www.vishaypg.com

In accordance with Schedule 1 of Hazardous Products Regulations (HPR) (WHMIS 2015)

<b>STOT - single exposure</b>	Specific target organ toxicity — single exposure, Category 3: May cause drowsiness or dizziness.
Toluene	Specific target organ toxicity — single exposure, Category 3 Narcosis (rat) (OECD 403)
2-Propanol	Specific target organ toxicity — single exposure, Category 3 Narcosis (rat) (OECD 403)
<b>STOT - repeated exposure</b>	Specific target organ toxicity — repeated exposure, Category 2; May cause damage to organs through prolonged or repeated exposure.
Toluene	Specific target organ toxicity — repeated exposure, Category 2 Oral: NOAEL 625 mg/kg bw/day (EU Method B.26) Inhalation: NOAEC 1131 mg/m <sup>3</sup> (rabbit) (OECD 453) Dermal: No data
<b>Aspiration hazard</b>	Aspiration hazard, Category 1: May be fatal if swallowed and enters airways.
Toluene	Aspiration hazard, Category 1 Hydrocarbon. Kinematic Viscosity 0.59 mm <sup>2</sup> /S
<b>Other information</b>	None known.

## SECTION 12: ECOLOGICAL INFORMATION

<b>Toxicity</b>	Aquatic toxicity, Chronic - Category 3; Harmful to aquatic life with long lasting effects.
Toluene	Estimated Mixture LC50 > 10 ≤ 100 mg/l. (Fish) Aquatic toxicity, Chronic - Category 3 Acute: LC50 (fish) mg/l 5.5 (96 hour) (Moles A et al, 1981) Chronic: NOEC (Fish) mg/l 1.4 (40 days) (Moles A et al, 1981)
<b>Persistence and degradability</b>	Part of the components are poorly biodegradable.
<b>Bioaccumulative potential</b>	The product has low potential for bioaccumulation.
<b>Mobility in soil</b>	The product is predicted to have high mobility in soil. May evaporate quickly.
<b>Other adverse effects</b>	None known.

## SECTION 13: DISPOSAL CONSIDERATIONS

<b>Waste treatment methods</b>	Dispose of this material and its container as hazardous waste. Containers of this material may be hazardous when empty since they retain product residue. Send after pre-treatment to a appropriate hazardous waste incinerator facility according to legislation.
--------------------------------	--

## SECTION 14: TRANSPORT INFORMATION

	<b>ADR/RID</b>	<b>IMDG</b>	<b>IATA/ICAO</b>
14.1 UN number	UN 1993	UN 1993	UN 1993
14.2 UN proper shipping name	FLAMMABLE LIQUID N.O.S (Toluene / 2-Propanol)	FLAMMABLE LIQUID N.O.S (Toluene / 2-Propanol)	FLAMMABLE LIQUID N.O.S (Toluene / 2-Propanol)
14.3 Transport hazard class(es)	3	3	3
14.4 Packing group	II	II	II
14.5 Environmental hazards	Not classified as a Marine Pollutant.	Not classified as a Marine Pollutant.	Not classified as a Marine Pollutant.
14.6 Special precautions for user	See Section: 2		
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable		

## SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture  
National regulations

# SAFETY DATA SHEET

Version: 1.0

Date of Issue: 10 May 2018

Date of First Issue: 10 May 2018

www.vishaypg.com

In accordance with Schedule 1 of Hazardous Products Regulations (HPR) (WHMIS 2015)

CEPA, Domestic Substances List	Toluene: Yes 2-Propanol: Yes
CEPA, Priority Substances List	Toluene: PSL 1
CEPA, List of Toxic Substances (Schedule 1)	Toluene: VOC - Item 65 2-Propanol: VOC - Item 65
CEPA, National Pollutant Release Inventory	Toluene: Threshold Category: Part 1A, Mass Threshold: 10 tonnes MPO Concentration threshold: 1%; Threshold Category: Part 5, Mass Threshold: 1 tonnes of 10 tonnes Total VOC air release, Concentration threshold: N/A 2-Propanol: Threshold Category: 1A, Mass Threshold: 10 tonnes MPO, Concentration threshold: 1%; Threshold Category: 5, Mass Threshold: 1 tonnes of 10 tonnes Total VOC air release, Concentration threshold: N/A
CEPA, Environmental Emergency Regulations	Toluene: Part 1: Substances Likely to Explode. Concentration: $\geq$ 1% w/w. Volume (Minimum): 2500 tonnes (metric).
<b>Non-Regional</b>	
IARC Monographs, List of Classifications	Toluene: Group 3 2-Propanol: Group 3

## SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: Not applicable – V1.0

Date of First Issue: 10 May 2018

Date of Issue: 10 May 2018

### References:

Existing Safety Data Sheet (SDS).

EU: Harmonised Classification(s) for Toluene (CAS No. 108-88-3), 2-Propanol (CAS No. 67-63-0). Existing ECHA registration(s) for Toluene (CAS No. 108-88-3), 2-Propanol (CAS No. 67-63-0).

### Literature References:

1. Ono A, Sekita K, Ogawa Y, Hirose A, Suzuki S, Saito M, Naito K, Kaneko T, Furuya T, Kawashima K, Yasuhara K, Matsumoto K, Tanaka S, Inoue T and Kurokawa Y, 1996, Reproductive and developmental toxicity studies of toluene II. Effects of inhalation exposure on fertility in rats, Journal of Environmental Pathology Toxicology and Oncology 15, 9-20
2. Moles A, Bates S, Rice SD, Korn S, 1981, Reduced growth of Coho salmon fry exposed to two petroleum components, Toluene and naphthalene in fresh water, transactions A. Fish. Soc. 110, 430-436

### LEGEND

LTEL: Long Term Exposure Limit

DNEL: Derived No Effect Level

PBT: PBT: Persistent, Bioaccumulative and Toxic

IARC: International Agency for Research on Cancer

OSHA = Occupational Safety and Health  
Administration

ACGIH: American conference of Governmental  
Industrial Hygiene

TLV: Threshold Limit Value (ACGIH)

VOC: Volatile Organic Compound

CEPA (Canadian Environmental Protection Act)

STEL: Short Term Exposure Limit

PNEC: Predicted No Effect Concentration

vPvB: very Persistent and very Bioaccumulative

NTP: National Toxicology Program

NIOSH/TIC: National Institute for Occupational Safety and Health Technical Information  
Center

BEI: Biological Exposure Indices (ACGIH)

TWA: Time Weighted Average

EU: European Union

### Disclaimers

Information contained in this publication or as otherwise supplied to Users is believed to be accurate and is given in good faith, but it is for the Users to satisfy themselves of the suitability of the product for their own particular purpose. Vishay Precision Group gives no warranty as to the fitness of the product for any particular purpose and any implied warranty or condition (statutory or otherwise) is excluded except to the extent that exclusion is prevented by law. Vishay Precision Group accepts no liability for loss or damage (other than that arising from death or personal injury caused by defective product, if proved), resulting from reliance on this information. Freedom under Patents, Copyright and Designs cannot be assumed.





## Disclaimer

ALL PRODUCTS, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Vishay Precision Group, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "VPG"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

The product specifications do not expand or otherwise modify VPG's terms and conditions of purchase, including but not limited to, the warranty expressed therein.

VPG makes no warranty, representation or guarantee other than as set forth in the terms and conditions of purchase. **To the maximum extent permitted by applicable law, VPG disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.**

Information provided in datasheets and/or specifications may vary from actual results in different applications and performance may vary over time. Statements regarding the suitability of products for certain types of applications are based on VPG's knowledge of typical requirements that are often placed on VPG products. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. You should ensure you have the current version of the relevant information by contacting VPG prior to performing installation or use of the product, such as on our website at [vpgsensors.com](http://vpgsensors.com).

No license, express, implied, or otherwise, to any intellectual property rights is granted by this document, or by any conduct of VPG.

The products shown herein are not designed for use in life-saving or life-sustaining applications unless otherwise expressly indicated. Customers using or selling VPG products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify VPG for any damages arising or resulting from such use or sale. Please contact authorized VPG personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.

Copyright Vishay Precision Group, Inc., 2014. All rights reserved.