SAFETY DATA SHEET

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ACCORDING TO OSHA HCS (29 CFR 1910.1200)

SECTION 1: IDENTIFICATION

Product identifier used on the label M-Line Rosin Solvent

Other means of identification

Chemical Name	Mixture
CAS No.	Mixture
EINECS No.	Mixture

Recommended use of the chemical and restrictions on use

Recommended use	PC38 Welding and soldering products (with flux coatings or flux cores.), flux products
Restrictions on use	Anything other than the above.

Details of the supplier of the safety data sheet

Supplier	VISHAY MEASUREMENTS GROUP, INC.
Address of Supplier	Post Office Box 27777 Raleigh, NC 27611 USA
Telephone	+1 919-365-3800
Fax	+1 919-365-3945
E-Mail (competent person)	mm.us@vishaypg.com

Emergency telephone number 1-800-424-9300 CHEMTREC (24 hours)

SECTION 2: HAZARD(S) IDENTIFICATION

Classification of the substance or mixture in accordance with paragraph (d) of 29 CFR 1910.1200

Physical hazards	Flammable Liquid, Category 2
Health hazards	Aspiration hazard, Category 1 Skin corrosion/irritation, Category 2 Eye Irritation, Category 2 Reproductive toxicity, Category 2 Specific target organ toxicity — single exposure, Category 3 Specific target organ toxicity — repeated exposure, Category 2
Environmental hazards	Not classified

Hazard Symbol

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.
Suspected of damaging the unborn child.
May cause drowsiness or dizziness. (Exposure route: Oral and Inhalation)
May cause damage to organs through prolonged or repeated exposure. (Affected Organs: Central Nervous System)

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.
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.
F 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.

Percent of the mixture consists of ingredient(s) of unknown acute toxicity: 0%

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substances Not applicable

Mixtures Substances in preparations / mixtures

Chemical identity of the substance	%W/W	CAS No.	EC No.	Hazard classification
Toluene	45 - 55	108-88-3	203-625-9	Flammable Liquid, Category 2 Aspiration hazard, Category 1 Eye Irritation, Category 2 Specific target organ toxicity — repeated exposure, Category 2 (Affected Organs: Central Nervous System) Specific target organ toxicity — single exposure, Category 3 (Narcotic Effects) Reproductive toxicity, Category 2
2-Propanol	45 - 55	67-63-0	200-661-7	Flammable Liquid, Category 2 Eye Irritation, Category 2 Specific target organ toxicity — single exposure, Category 3 (Narcotic Effects)

SECTION 4: FIRST AID MEASURES

Description of first aid measures

Self-protection of the first aider — 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.

Inhalation — 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.
Skin Contact	IF ON SKIN: Remove contaminated clothing and wash all affected areas with plenty of water. Contaminated clothing should be thoroughly cleaned. If skin irritation occurs: Get medical advice/attention. IF exposed or concerned: Get medical advice/attention.
Eye Contact	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. 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.
Most important symptoms and effects, both acute and delayed	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.
Indication of any immediate medical attention and special treatment needed	Treat symptomatically
Notes to a physician:	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.
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.

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. 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.

Conditions for safe storage, including any incompatibilities

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.

Storage temperature: Ambient. Keep at temperature not exceeding (°C): 25

Incompatible materials: Strong oxidising agents, Acids (Nitric acid and Sulphuric acid), Aluminium, Halogens and halogenated compounds.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

SUBSTANCE	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m³)	STEL (ppm)	STEL (mg/m³)	Note
Toulene	108-88-3	100	375	150*	560*	NIOSH
		200	-	300	-	OSHA
		20	-	-	-	ACGIH, A4
Propan-2-ol	67-63-0	400	980	500*	1225*	NIOSH
		400	980	-	-	OSHA
		200	-	400	-	ACGIH, A4

Note: OSHA PELs 1910.1000 TABLE Z-1, Z-2 / NIOSH RELs / ACGIH TLVs
*NIOSH 15 minutes average value
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.

Biological Exposure Indices

SUBSTANCE	CAS No.	Determinant	Biological Exposure Indices	Sampling Time	Note
Toluene	108-88-3	Toluene in blood Toluene in urine o-Cresol in urine with hydrolosis	0.02 mg/l 0.03 mg/l 0.3 mg/g creatinine	Prior to last shift of workweek End of shift End of shift	- - B
Propan-2-ol	67-63-0	Acetone in urine	-	End of shift at end of workweek	Nq

Source: 2015 ACGIH Biological Exposure Indicies (BEIs)
B - Background
Nq: Nonquantative

The other components listed in Section 3 do not have biological exposure indicies.

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)

General hygiene measures for the handling of chemicals are applicable. Keep good industrial hygiene. 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. IF exposed: Flush with fresh water if contact with skin or eyes.

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)

Body protection:
Wear suitable coveralls to prevent exposure to the skin.

Respiratory protection

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

Appearance	Clear Colourless Liquid
Odor	Benzene-like Odour
Odor 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 (Butyl acetate = 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_2O = 1)
Solubility(ies)	Not established.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	Not available.

Other information VOC: 825 g/l

SECTION 10: STABILITY AND REACTIVITY

Reactivity	Stable under normal conditions.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Highly flammable liquid and vapour. Danger of flashback. Hazardous polymerisation will not occur.

Conditions to avoid	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
Incompatible materials	Strong oxidising agents, Acids (Nitric acid and Sulphuric acid), Aluminium, Halogens and halogenated compounds.
Hazardous decomposition product(s)	May decompose in a fire giving off toxic fumes. Oxides of carbon.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects (Substances in preparations / mixtures)

Acute toxicity - Ingestion	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.
Acute toxicity - Inhalation	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 >20.0 mg/l.
Acute toxicity - Skin Contact	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.
Skin corrosion/irritation	Skin corrosion/irritation, Category 2: Causes skin irritation.
Serious eye damage/irritation	Eye Irritation, Category 2: Causes serious eye irritation.
Respiratory or skin sensitization	Based upon the available data, the classification criteria are not met.
Germ cell mutagenicity	Based upon the available data, the classification criteria are not met.
Carcinogenicity	Based upon the available data, the classification criteria are not met.
Reproductive toxicity	Reproductive toxicity, Category 2: Suspected of damaging the unborn child.
STOT - single exposure	Specific target organ toxicity — single exposure, Category 3: May cause drowsiness or dizziness. (Exposure route: Oral and Inhalation)
STOT - repeated exposure	Specific target organ toxicity — repeated exposure, Category 2: May cause damage to organs through prolonged or repeated exposure. Affected Organs: Central nervous system.
Aspiration hazard	Aspiration hazard, Category 1: May be fatal if swallowed and enters airways.

Information on likely routes of exposure

Inhalation	Possible – accidental exposure
Ingestion	Unlikely – accidental exposure
Skin Contact	Possible – accidental exposure
Eye Contact	Unlikely – accidental exposure

Early onset symptoms related to exposure	Causes skin irritation. Causes serious eye irritation. May cause drowsiness or dizziness. If inhalation occurs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath and may cause transient central nervous system (CNS) depression.
Delayed health effects from exposure	May be fatal if swallowed and enters airways. Suspected of damaging the unborn child. May cause damage to organs through prolonged or repeated exposure. (Affected Organs: Central Nervous System)

Other information

NTP Report on Carcinogens	Not Listed
IARC Monographs	Toluene – Listed; Group 3 2-Propanol – Listed; Group 3
OSHA Designated Carcinogen	Not Listed

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity	Based upon the available data, the classification criteria are not met. Estimated Mixture LC50 >100 mg/l (Fish)
Persistence and degradability	Part of the components are poorly biodegradable.

Bioaccumulative potential	The product has low potential for bioaccumulation.
Mobility in soil	The product is predicted to have high mobility in soil. May evaporate quickly.
Other adverse effects	None known.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods	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

	ADR/RID	**IMDG**	**IATA**
UN number	UN 1993	UN 1993	UN 1993
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)
Transport hazard class(es)	3	3	3
Packing group	II	II	II
Environmental hazards	Not classified as a Marine Pollutant.	Not classified as a Marine Pollutant.	Not classified as a Marine Pollutant.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.		
Special precautions for user	See Section: 2		

SECTION 15: REGULATORY INFORMATION

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

US Federal Regulations

TSCA (Toxic Substance Control Act)	Toluene: Subject to 25,000 lb reporting threshold 2-Propanol: Subject to 25,000 lb reporting threshold
EPCRA/SARA Section 302 Extremely Hazardous Substances	Not listed
EPCRA Section 313 Toxics Release Inventory (TRI) Program	Toluene: De Minimis limit: 1% 2-Propanol: De Minimis limit: 1%
NIOSH Occupational Carcinogen List	Not listed
OSHA List of highly hazardous chemicals, toxics and reactives	Not listed
NTP Report on Carcinogens (RoC) List	Not listed
Poison Prevention Packaging Act	Toluene: Substance requiring special packaging - Solvents for paint or other similar surface-coating material

US State Regulations Not listed

California State, Proposition 65 List	Toluene: Safe harbor level - MADL: 7000 ug/day
California State, Safer Consumer Products Regulations	Toluene: Initial Candidate Chemicals List 2-Propanol: Candidate Chemicals List
Maine State, Toxic Chemicals in Children's Products Act	Toluene: COC list. CHC list
New Jersey State Worker and Community RTK Act	Toluene: RTKHSL. SHHSL 2-Propanol: RTKHSL. SHHSL
Pennsylvania State, Worker and Community RTK Act	Toluene: Hazardous Substance List. Environmental Hazard List 2-Propanol: Hazardous Substance List. Environmental Hazard List
Rhode Island State, Hazardous Substances RTK Act	Toluene: Hazardous Substance List 2-Propanol: Hazardous Substance List

Non-Regional

IARC Monographs, List of Classificationsonal	Toluene: Group 3 2-Propanol: Group 3

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: Updated mixture classification. New SDS Regulation compliant with HazCom 2012 format, all sections have been updated to include new information. Please review SDS with care.

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References:
Existing Safety Data Sheet (SDS)
EU Data: Existing ECHA registration(s) for and Harmonised Classification(s) for Toluene (CAS# 108-88-3) and 2-Propanol (CAS# 67-63-0).

GHS Classification of the substance or mixture	Classification Procedure
Flammable Liquid, Category 2	Flash Point [Closed cup] Test Result/ Boiling Point (°C)
Aspiration hazard, Category 1	Estimated Viscosity / Threshhold Calculation
Skin corrosion/irritation, Category 2	Threshold Calculation
Eye Irritation, Category 2	Threshold Calculation
Reproductive toxicity, Category 2	Threshold Calculation
Specific target organ toxicity — single exposure, Category 3	Threshold Calculation
Specific target organ toxicity — repeated exposure, Category 2	Threshold Calculation

LEGEND

ACGIH: American Conference of Governmental Industrial Hygienists
BEI: Biological Exposure Indices (ACGIH)
IARC: International Agency for Research on Cancer
Irr: Irritation
NIOSH: National Institute of Occupational Safety and Health
NTP: National Toxicology Program
OSHA: The Occupational Safety & Health Administration
PBT: Persistent, Bioaccumulative and Toxic
PEL: Permissible exposure limit
REL: Recommended exposure limit
SCL: Specific Concentration Limit
Skin": Risk of overexposure via dermal contact
STEL: Short Term Exposure Limit
TLV: Threshold Limit value
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average
URT: Upper respiratory tract
vPvB: very Persistent and very Bioaccumulative

Training advice: Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

Disclaimers

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