SAFETY DATA SHEET

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ACCORDING TO OSHA HCS (29 CFR 1910.1200)

SECTION 1: IDENTIFICATION

Product identifier used on the label P Adhesive

Other means of identification

Chemical Name	Mixture
CAS No.	Mixture
EINECS No.	Mixture

Recommended use of the chemical and restrictions on use

Recommended use	Adhesives.
Restrictions on use	For professional users only.

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 3
Health hazards	Aspiration hazard, Category 1 Skin corrosion/irritation, Category 2 Eye Irritation, Category 2 Specific target organ toxicity — single exposure, Category 3 Reproductive toxicity, Category 1B Specific target organ toxicity — repeated exposure, Category 2
Environmental hazards	Hazardous to the aquatic environment, Chronic, Category 3

Hazard Symbol

Signal Word(s) Danger

Hazard Statement(s)

Flammable liquid and vapour.
May be fatal if swallowed and enters airways.
Causes skin irritation.
Causes serious eye irritation.
May cause respiratory irritation.
May damage the unborn child by ingestion.
May cause damage to organs (Central Nervous System, Liver, Kidney) through prolonged or repeated exposure.
Harmful to aquatic life with long lasting effects.

Precautionary Statement(s) Obtain special instructions before use.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Do not breathe vapour.
Keep container tightly closed.
Wash hands and exposed skin after use.
Wear protective gloves/protective clothing/eye protection/face protection.
IF ON SKIN: Wash with plenty of water.
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.
If exposed or concerned: Get medical advice/attention.
Do NOT induce vomiting.
Store locked up
Dispose of contents in accordance with local, state or national legislation.

Other hazards None known.

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
N-Methylpyrrolidone	60 - 70	872-50-4	212-828-1	Skin Irritation, Category 2 Eye Irritation, Category 2 Specific target organ toxicity — single exposure, Category 3 (Respiratory tract irritation (SCL: ≥ 10%) Reproductive toxicity, Category 1B (SCL: ≥ 5%)
Xylene	20 - 25	1330-20-7	215-535-7	Flammable Liquid, Category 3 Aspiration hazard, Category 1 Acute toxicity, Category 4, Dermal Skin Irritation, Category 2 Eye Irritation, Category 2 Acute toxicity, Category 4, Inhalation Specific target organ toxicity — single exposure, Category 3 (Respiratory tract irritation) Specific target organ toxicity — repeated exposure, Category 2
3-Isobenzofurandione, 5,5'-carbonylbis-, polymer with 4,4'-methylenebis(benzenamine)	< 20	25038-84-0	-	Skin Irritation, Category 2 Eye Irritation, Category 2 Hazardous to the aquatic environment, Chronic , Category 2

SECTION 4: FIRST AID MEASURES

Description of first aid measures
Self-protection of the first aider

Do not breathe vapour. Wear suitable protective clothing. Wear suitable respiratory protective equipment if exposure to high levels of material are likely.

	Avoid all contact.
Inhalation	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical advice/attention if you feel unwell. 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. Rinse mouth. Drink two glasses of water. Do not give anything by mouth to an unconscious person. IF exposed or concerned: Get medical advice/attention.
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 respiratory irritation. May damage the unborn child. May cause damage to organs through prolonged or repeated exposure.
Indication of any immediate medical attention and special treatment needed	Treat symptomatically.
Notes to a physician:	If inhalation occurs, signs and symptoms may include sore throat, headache, nausea, coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath and may cause transient central nervous system (CNS) depression. In case of ingestion, Ipecac-induced emesis is not recommended.Consider use of charcoal as a slurry (240mL water/30 g charcoal). Usual dose: 25 to 100 g in adults.If determined necessary (and under qualified medical supervision), the stomach should be emptied by gastric lavage with the airway protected by endotracheal intubation.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing media	
Suitable Extinguishing Media	As appropriate for surrounding fire. Extinguish with carbon dioxide, dry chemical, foam or waterspray.
Unsuitable extinguishing Media	Do not use water jet. Direct water jet may spread the fire.
Special hazards arising from the substance or mixture	Flammable liquid and vapour. May decompose in a fire giving off toxic fumes. May decompose in a fire giving off toxic fumes. Ammonia, Ethanol, Oxides of nitrogen and Oxides of carbon. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback. Can form explosive mixture with air particularly in empty uncleaned receptacles.
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	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. Do not breathe vapour. Avoid all contact. Use personal protective equipment as required. See Section: 8.
Methods and material for containment and cleaning up	Ensure full personal protection (including respiratory protection) during removal of spillages. Use non-sparking equipment when picking up flammable spill. Adsorb spillages onto sand, earth or any suitable adsorbent material. Do NOT absorb in saw-dust or other combustible absorbents. 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.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Take precautionary measures against static discharge. Do not use sparking tools. Ensure adequate ventilation. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid all contact. Do not breathe vapour. Use personal protective equipment as required. See Section: 8. 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. 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.

Storage temperature: Ambient. Keep at a temperature not exceeding (°C): 50.

Incompatible materials: Keep away from: Strong oxidising agents and Strong Alkalis.

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
Xylene	1330-20-7	100	435	150*	655*	NIOSH
		100	435	-	-	OSHA
		100	-	150	-	ACGIH

Note: OSHA PELs 1910.1000 TABLE Z-1 / NIOSH RELs / ACGIH TLVs
*NIOSH 15 minute average values

The other components listed in Section 3 do not have occupational exposure limits.

Biological Exposure Indices

SUBSTANCE	CAS No.	Determinant	Biological Exposure Indices	Sampling Time	Note
Xylene, o-,m-,p- or mixed isomers	1330-20-7	Methylhippuric acids in urine.	15 g/g Creatinine	End of shift	-

Source: 2015 ACGIH Biological Exposure Indicies (BEIs)

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

Appropriate engineering controls

Ensure adequate ventilation or use appropriate containment. Atmospheric levels should be controlled in compliance with the occupational exposure limit. Local exhaust recommended. Use non-sparking ventilation systems, approved explosion-proof equipment, and intrinsically safe electrical systems. Guarantee that the eye flushing systems and safety showers are located close to the working place.

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

General hygiene measures for the handling of chemicals are applicable. Avoid all contact. Do not breathe vapour. Wash hands before breaks and after work. Keep work clothes separately. Contaminated clothing should be thoroughly cleaned. 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. 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: Butyl rubber.

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

Respiratory protection

Work in well ventilated zones or use proper respiratory protection. Open system(s): Wear suitable respiratory protection. A suitable mask with filter type A may be appropriate.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Pale yellow viscous liquid.
Odor	Aromatic odour.
Odor Threshold	Not available.
pH	Not established.
Melting Point/Freezing Point	Not available.
Initial boiling point and boiling range	Not available.
Flash Point	29 - 37°C
Evaporation rate (Butyl acetate = 1)	Not available.
Flammability (solid, gas)	Not applicable - Liquid.
Upper/lower flammability or explosive limits	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	1.03 @ 20°C (H2O = 1)
Solubility(ies)	Not available.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	6 – 10 Poise @ 25°C

Other information Volatile Organic Compound Content (%): 87 - 89

SECTION 10: STABILITY AND REACTIVITY

Reactivity	Stable under normal conditions.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Flammable liquid and vapour. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback.
Conditions to avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep away from direct sunlight. Do not use sparking tools.
Incompatible materials	Keep away from: Strong Reducing agent/Oxidizing agents and Strong Alkalis.
Hazardous decomposition product(s)	May decompose in a fire giving off toxic fumes. Ammonia, Ethanol, Oxides of nitrogen and 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 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 1B: May damage the unborn child by ingestion.
STOT - single exposure	Specific target organ toxicity — single exposure, Category 3: May cause respiratory irritation.
STOT - repeated exposure	Specific target organ toxicity — repeated exposure, Category 2: May cause damage to organs (Central Nervous System, Liver, Kidney) through prolonged or repeated exposure.
Aspiration hazard	Aspiration hazard, Category 1: May be fatal if swallowed and enters airways.

Information on likely routes of exposure

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

Early onset symptoms related to exposure	Causes irritation to eyes and skin.
Delayed health effects from exposure	May damage fertility or the unborn child. May cause damage to organs (Central Nervous System, Liver, Kidney) through prolonged or repeated exposure.

Other information

NTP Report on Carcinogens	Not listed
IARC Monographs	Xylene - Group 3
OSHA Designated Carcinogen	Not listed

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity	Aquatic Chronic 3: Harmful to aquatic life with long lasting effects. Estimated Mixture LC50 > 10 to ≤ 100 mg/l (Fish)
Persistence and degradability	No data for the mixture as a whole. Part of the components are poorly biodegradable.
Bioaccumulative potential	No data for the mixture as a whole.
Mobility in soil	The product is predicted to have low mobility in soil.
Other adverse effects	None known.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods	Do not release undiluted and unneutralised to the sewer. This material and its container must be disposed of as hazardous waste. Containers of this material may be hazardous when empty since they retain product residue. Dispose of wastes in an approved waste disposal facility. Dispose of contents in accordance with local, state or national legislation.

SECTION 14: TRANSPORT INFORMATION

	ADR/RID	**IMDG**	**IATA**
UN number	UN 1133	UN 1133	UN 1133
UN proper shipping name	ADHESIVES containing flammable liquid	ADHESIVES containing flammable liquid	ADHESIVES containing flammable liquid
Transport hazard class(es)	3	3	3
Packing group	III	III	III
Environmental hazards	Not classified as a	Not classified as a	Not classified as a

	Marine Pollutant / Environmentally hazardous substance	Marine Pollutant / Environmentally hazardous substance	Marine Pollutant / Environmentally hazardous substance
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)	N-Methylpyrrolidone - subject to 25,000 lb reporting threshold Xylene - subject to 25,000 lb reporting threshold
EPCRA/SARA Section 302 Extremely Hazardous Substances	Not Listed
EPCRA Section 313 Toxics Release Inventory (TRI) Program	N-Methylpyrrolidone – De Minimis limit: 1% Xylene - 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	Xylene - Substance requiring special packaging - Solvents for paint or other similar surface-coating materia

US State Regulations

California State, Proposition 65 List	N-Methylpyrrolidone - Safe harbor level - MADL: 3200 (inhalation) ug/day; 17000 (dermal) ug/day
California State, Safer Consumer Products Regulations	N-Methylpyrrolidone - Candidate Chemicals List Xylene - Initial Candidate Chemicals List
Maine State, Toxic Chemicals in Children's Products Act	N-Methylpyrrolidone - COC list
New Jersey State Worker and Community RTK Act	N-Methylpyrrolidone - RTKHSL. SHHSL Xylene - RTKHSL. SHHSL
Pennsylvania State, Worker and Community RTK Act	N-Methylpyrrolidone - Hazardous Substance List Xylene - Hazardous Substance List
Rhode Island State, Hazardous Substances RTK Act	Xylene – Listed

Non-Regional

IARC Monographs, List of Classifications	Xylene - 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.

Version 3.0
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References:
Existing Safety Data Sheet (SDS)
EU Data: Existing ECHA registration(s) for and Harmonised Classification(s) for N-Methylpyrrolidone (CAS# 872-50-4) and Xylene (CAS# 1330-20-7).
DATA SOURCES for 4,4-methylene dianiline (Polymer) (CAS# 25038-84-0):
http://webnet.oecd.org/ccrweb/ChemicalDetails.aspx?ChemicalID=E509354A-1DD6-4912-8E39-FD7862E03FA4
http://yosemite.epa.gov/oppts/epatscat8.nsf/ReportSearchView/9B5B68EA7979F0F485256930004ED728

GHS Classification of the substance or mixture	Classification Procedure
Flammable Liquid, Category 3	Flash Point [Closed cup] Test Result
Aspiration hazard, Category 1	Estimated Viscosity @ 40°C/Existing Safety Data Sheet (SDS)

Skin corrosion/irritation, Category 2	Threshold Calculation
Eye Irritation, Category 2	Threshold Calculation
Specific target organ toxicity — single exposure, Category 3	Threshold Calculation
Reproductive toxicity, Category 1B	Threshold Calculation
Specific target organ toxicity — repeated exposure, Category 2	Threshold Calculation
Hazardous to the aquatic environment, Chronic, Category 3	Summation 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.

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