Safety Data Sheet

1. Product and Company Identification

Product Name:	**LIQUIDWELD™ 5310B**
Material Uses:	Methacrylate Adhesive Resin
(M)SDS#:	5310B-20210924
Validation Date:	September 24, 2021
Supplier/Manufacturer:	Specialty Polymers & Services, Inc. (SP&S, Inc.) 27822 Fremont Court Valencia, California (CA) 91355, U.S.A. Non-emergency phone number: (661) 294-1790 (7AM – 5PM PST) E-mail: msds@spolymers.com

In case of emergency: Chemtrec (800) 424-9300 or (703) 527-3887

2. Hazards Identification

GHS CLASSIFICATION OF SUBSTANCE OR MIXTURE:

Skin corrosion/irritation:	Category 2, H315	Eye damage/irritation:	Category 1, H318
Specific Target Organ Toxicity - Repeated Exposure:	Category 2, H373	Specific Target Organ Toxicity - Single Exposure (Respiratory Tract):	Category 3, H335
Skin sensitization:	Category 1, H317	Flammable liquid:	Category 2, H225

GHS LABEL ELEMENTS:

HAZARD SYMBOLS:

SIGNAL WORDS: DANGER!

HAZARD STATEMENTS:

H315 Causes skin irritation.

H318 Causes serious eye damage.

H373 May cause damage to organs through prolonged or repeated exposure.

H335 May cause respiratory irritation.

H317 May cause an allergic skin reaction.

H225 Highly flammable liquid and vapor.

PRECAUTIONARY STATEMENTS:

PREVENTION:
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P264 Wash hands thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves, clothing, and eye/face protection.

RESPONSE:
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P364+P353+P352 IF ON SKIN (or hair): Take off immediately all contaminated clothing and wash before reuse. Rinse skin with water/shower. Wash with plenty of soap and water.
P333+P313 If skin irritation or rash occurs: Get medical attention.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338+P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

STORAGE: P403+P235 Store in a well-ventilated place. Keep cool.

DISPOSAL: P501 Dispose of contents and containers in accordance with local, regional and international regulations.

Precautionary statements are listed according to the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS) – Annex III

See toxicological information (section 11)
General Information: Read entire MSDS for a more thorough evaluation of the hazards

3. Composition / Information on Ingredients

Name	CAS Number	%
Methyl methacrylate	80-62-6	45 – 65
Chlorosulfonated Polyethylene	68037-39-8	25 – 45
Methacrylic acid	79-41-4	1 – 3

Amounts specified are typical and do not represent a specification. Remaining components are proprietary, non-hazardous, and/or present at amounts below reportable limits.

4. First Aid Measures

Eye Contact:	Check for and remove any contact lenses. Immediately flush eyes for at least 15 minutes with running water. Hold eyelids apart to ensure rinsing of the entire eye surface and lids with water. Get immediate medical attention.
Skin Contact:	In case of contact, wash affected areas with plenty of water, and soap, if available, for several minutes. Remove and clean contaminated clothing and shoes before re-use. Get medical attention if irritation occurs.
Inhalation:	Move exposed person to fresh air. Call a physician if symptoms develop or persist. If not breathing, give artificial respiration or oxygen. If breathing is difficult, transport to medical care and, if available, give supplemental oxygen. Loosen tight clothing such as a collar, tie, belt, or waistband. Get immediate medical attention.
Ingestion:	Wash out mouth with water. If swallowed dilute by giving two (2) glasses water to drink. Do not induce vomiting until direct to do so by medical personnel. Keep respiratory tract clear. Never give anything by mouth to an unconscious person. Get medical attention if irritation occurs.
Note to physician:	No specific treatment. Treat symptomatically. Keep victim under observation. Call poison control center if large quantities were ingested. In the case of lung irritation: Primary treatment using corticoide spray, eg. Auxiloson spray, Pulmicort-dosage-spray. (Auxiloson and Pulmicort are registered trademarks).

5. Fire-Fighting Measures

Flash point:	10°C (50°F)
Hazardous Thermal Decomposition Products:	Decomposition products may include the following materials: carbon dioxide, carbon monoxide, and nitrogen oxides. Fire may produce irritating, corrosive and/or toxic gases. In case of fire and/or explosion do not breathe fumes.
Extinguishing Media:	Carbon dioxide, foam, dry chemical, water spray as suitable for the surrounding fire. Do not use high volume water jet.
Special Exposure Hazards:	Promptly isolate the scene by removing all persons from the vicinity of the fire. No actions shall be taken involving any personal risk or without suitable training. Use of water may result in the formation of very toxic aqueous solutions.
Special Protective equipment for fire-fighters:	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Do not allow run-off from firefighting to enter drains or water courses. Collect contaminated fire extinguishing water separately. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Use water spray/stream to protect personnel and to cool endangered containers.

6. Accidental Release Measures

Personal Precautions:	No actions shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering area. Do not touch or walk through spilled material. Avoid breathing vapor or mist and provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
Environmental Precautions:	Avoid dispersal of spilled material and runoff that leads to contact with soil, waterways, drains, and sewers. Inform the relevant authorities if the product has caused environmental pollution.

Methods of Clean Up: Stop leak if without risk. Remove all sources of ignition. Move containers from spill area. Approach spill from up wind if possible. Prevent spill from entering sewers, rivers and other water courses, basements, or confined areas. Wash into effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material (e.g. sand, earth, vermiculite, or diatomaceous earth) and place in container for disposal according to local regulations. Dispose of only using a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information.

7. Handling and Storage

Handling: Wear appropriate personal protective equipment (see Section 8) when handling. Keep away from sources of ignition-no smoking. Take precaution against static discharge. Avoid exposure – obtain special instructions before use. Avoid breathing mists/vapors. Avoid contact with skin and eyes. Eating, drinking, and smoking should be prohibited in areas where chemicals are handled, stored, or processed. Workers should wash hands and face before eating, drinking, and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Persons with a history of skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in processes where this material is used. Keep in the original container or a suitable alternate made from a compatible material. Keep all containers tightly closed when not in use. Empty containers retain product residue and should be disposed of properly. Do not reuse empty containers for other purposes or to hold other materials.

Storage: Store in accordance with local regulations. Store in original containers, protect from direct sunlight and keep in a dry, cool, well ventilated areas, fire resistant area away from sources of ignition and incompatible materials. Keep away from incompatible materials (see Section 10) and food and drink. Do not store together with: gas, explosives, flammable solids, pyrophoric liquids and solids, self-heating substances and mixtures, substances or mixtures in contact with water emit flammable gases, oxidizing liquids or solids, ammonium nitrate, self-reactive substances and mixtures, organic peroxides, non-combustible toxic substances, radioactive substances, and infectious substances. Keep all containers tightly closed when not in use and tightly re-seal after use. Keep container upright to prevent leakage. Observe label precautions. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Electrical installations / working materials must comply with the technological safety standards. Protect against light, UV-radiation/sunlight, heat, cooling, and moisture.

8. Exposure Controls / Personal Protection

Ingredient	Exposure Limits
Methyl methacrylate	WEL – TWA: 50 ppm / 208 mg/m^3 (8 hours) WEL – STEL: 100 ppm / 416 mg/m^3 (15 minutes)
Methacrylic acid	WEL – TWA: 20 ppm / 72 mg/m^3 (8 hours) WEL – STEL: 40 ppm / 143 mg/m^3 (15 minutes)

Recommended Monitoring Procedures: If this product contains ingredients with exposure limits, personal, workplace, atmospheric, or biological monitoring may be required to determine the effectiveness of the ventilation system or other control measures and/or to determine whether it is necessary to use respiratory protective equipment. Consider European Standard EN 689 or similar industry or governmental guidelines for appropriate methods for the assessment of exposure by inhalation to chemical agents and/or hazardous substances.

Engineering measures: No special ventilation requirements are necessary for this product. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation, or other engineering controls to keep worker exposure below the recommended or statutory limits.

Hygiene measures: Wash hands, forearms, and face thoroughly after handling any chemical products, before eating, smoking, and using the lavatory and at the end of the work period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protection

Respiratory: A respiratory protection program in compliance with 29CFR1910.134, or other applicable regulatory standard must be followed whenever exposure limits may be exceeded. If engineering controls are not feasible, or if inadequate ventilation wear respiratory protection. Respirator selection must be based on

known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands: Wear neoprene, nitrile rubber, butyl rubber or other suitable impervious gloves; consider European Standard EN374 or similar industry or governmental guidelines. Consider the parameters specified by the glove manufacture and check gloves during use to ensure they are retaining their protective properties. Gloves selected must have a breakthrough rating appropriate for the work shift. If a risk assessment indicates that it is necessary, gloves should always be worn when handling chemical products.

Eyes: When a risk assessment indicates, safety eyewear complying with an approved standard, such as OSHA Standard 29CFR1910.133 or European Standard EN166, should be used to avoid exposure to liquid splashes, mists, or dusts. If contact is possible, at a minimum use chemical splash googles. If significant splash hazard may occur, consider using a full-face shield.

Skin: Personal Protective equipment for the body should be selected based on the task being performed and the risks involved. Typical protective equipment includes non-absorbent lab coats, disposable protective sleeves, coats, or whole-body suits. Consider CFR1910.132 and CFR1910.136 for OSHA approved standards on protective clothing and footwear. Consider seeing a safety specialist to determine the appropriate level of protection for your task.

Environmental Exposure Controls: Emissions from ventilation or work processes should be checked to ensure they comply with the requirements of environmental regulations. In some cases, fume scrubbers, filters, or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and Chemical Properties

Appearance:	Off-white viscous liquid	Odor	characteristic
Boiling Point:	100°C (212°F)	Freezing Point:	Not determined
Flash Point:	10°C (50°F)	pH	Not determined
Auto-ignition Temperature:	Not determined		
Vapor Pressure:	Not determined	Water Solubility:	Not determined
Specific Gravity:	Not determined	Vapor Density:	Not determined
Evaporation Rate:	Not determined	VOC:	Not determined
Viscosity:	Not determined		

10. Stability and Reactivity

Chemical Stability: This product is stable, under normal conditions of storage and use, hazardous reactions will not occur.

Hazardous Polymerization: Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to Avoid: High temperatures, sources of ignition, and exposure to oxidizing agents, reducing agents, bases, acids, and alkalis. Do not store together with: gas, explosives, flammable solids, pyrophoric liquids and solids, self-heating substances and mixtures, substances or mixtures in contact with water emit flammable gases, oxidizing liquids or solids, ammonium nitrate, self-reactive substances and mixtures, organic peroxides, non-combustible toxic substances, radioactive substances, and infectious substances. Protect against light, UV-radiation/sunlight, heat, cooling, and moisture.

Hazardous Decomposition: Under normal conditions of storage and use, hazardous decomposition products should not be produced. Thermal Decomposition products may include the following materials: carbon dioxide, carbon monoxide, and nitrogen oxides. Fire may produce irritating, corrosive and/or toxic gases. In case of fire and/or explosion do not breathe fumes.

11. Toxicological Information

Acute Toxicity

Product/Ingredient Name	Test	Endpoint	Species	Result
Methyl methacrylate	-	LD50 Dermal	Rabbit	> 5,000 mg/kg
	-	LC50 Inhalation (Aerosol)	Rat	29.8 mg/l
Methacrylic acid	-	LD50 Oral	-	1,320 mg/kg
	-	LD50 Dermal	-	1,100 mg/kg
	-	LC50 Inhalation (Aerosol)	Rat	7.1 mg/l (4 hours)

Irritation / Corrosion

Product/Ingredient Name	Test	Species	Result
Product	-	-	Skin – Irritating
	-	-	Eyes – Serious eye damage

Sensitizer

Product/Ingredient Name	Test	Species	Result

Methyl methacrylate	-	-	Skin – Sensitizing

Mutagenicity

Product/Ingredient Name	Test	Result
No data available		

Conclusion/ Summary: the weight of evidence does not support classification as a germ cell mutagen.

Carcinogenicity

Product/Ingredient Name	Test	Species	Dose	Exposure	Result/Result type
Methyl methacrylate	OECD Test Guideline 451	Rat	-	102 weeks	NOAEC ≥ 2.05 mg/l

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC, NTP or OSHA.

Reproductive Toxicity

Product/Ingredient Name	Test	Species	Maternal Toxicity	Fertility	Developmental Effects
Methyl methacrylate	OECD Test Guideline 416	Rat	NOAEL = 400 mg/kg(bw)/day		
Methacrylic acid	OECD Test Guideline 416	Rat	NOAEL = 400 mg/kg(bw)/day		

Teratogenicity

Product/Ingredient Name	Test	Species	Results
Methyl methacrylate	OECD Test Guideline 414	Rat	NOAEC ≥ 8.3 mg/l
Methacrylic acid	OECD Test Guideline 413, 90 days	Rat	NOAEC = 350 ppm

Potential Acute Health Effects

Inhalation: May cause respiratory tract irritation; irritating to the lungs.
Ingestion: May cause gastrointestinal irritation, nausea and vomiting.
Skin Contact: Causes skin irritation. May cause an allergic skin reaction.
Eye Contact: Causes serious eye irritation; liquid or vapors may cause irritation.

Potential Chronic Health Effects

Product/Ingredient Name	Test	Endpoint	Species	Results
Methyl methacrylate	Oral toxicity; 104 weeks	Sub-chronic NOAEL	Rat	≥ 2000 mg/kg(bw)/day
	OECD 453, Inhalation toxicity; 104 weeks	Sub-chronic NOEL	Rat	500 ppm

General: Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels
Target Organs: May cause respiratory irritation.
Carcinogenicity: No known significant effects or critical hazards
Mutagenicity: No known significant effects or critical hazards
Teratogenicity: No known significant effects or critical hazards
Developmental Effects: No known significant effects or critical hazards
Fertility Effects: No known significant effects or critical hazards

12. Ecological Information

Environmental Effects: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Water polluting material. May be harmful to the environment if released in large quantities.

Aquatic Ecotoxicity

Product/Ingredient Name	Test	Endpoint	Exposure	Species	Result
Methyl methacrylate	-	Acute LC50	96 hours	Fish	79 mg/l
	-	Acute EC50	48 hours	Daphnia	69 mg/l
	-	Acute ErC50	72 hours	Algae	> 110 mg/l
Methacrylic acid	-	Acute LC50	96 hours	Fish	85 mg/l
	-	Acute ErC50	72 hours	Algae	45 mg/l
	-	Acute EC50	48 hours	Daphnia	> 130 mg/l
	-	NOEC	35 days	Fish	10 mg/l
	-	NOEC	21 days	Daphnia	53 mg/l

Persistence and Degradability

Product/Ingredient Name	Test	Period	Result
Methyl methacrylate	OECD Test Guideline 301C	14 days	94%
Methacrylic acid	OECD Test Guideline 301D	28 days	86%

Product/Ingredient Name	Aquatic half-life	Photolysis	Biodegradability
Methyl methacrylate	-	-	Easily biodegradable

Methacrylic acid	-	-	Easily biodegradable

Bioaccumulative potential

Product/Ingredient Name	Log P_{ow}	BCF	Potential
Methyl methacrylate	1.32	-	-
Methacrylic acid	0.93	-	-

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Other information: BOD5: Not determined COD: Not determined TOC: Not determined

13. Disposal Consideration

Waste Disposal Method: Disposal of this products, solutions, and by-products should at all times comply with the requirements of environmental and waste disposal legislation and any regional or local authority requirements. Dispose of surplus, non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed on untreated to the sewer system unless this is complaint with all applicable laws and regulations. Incineration by an approved and licensed contractor is the most common disposal method. Packaging materials that and absorbents containing the product can typically be landfilled or incinerated. Contact local authorities to determine the proper means of disposal in your area.

14. Transport Information

DOT: Non-Bulk **Label:** Flammable Liquid
Proper Shipping Name: Adhesives
Hazard Class: 3 **ID Number:** UN1133 **Packing Group:** PGII

IATA: Non-Bulk **Label:** Flammable Liquid
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15. REGULATORY INFORMATION

US Federal Regulations:

Occupational Safety and Health Act (OSHA): This product is a hazardous chemical under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

SARA Title III Section 304 - CERCLA: This product does contain chemicals regulated under Section 304 as extremely hazardous substance(s) for emergency release notification ("CERCLA" List).

Ingredient	Component RQ (lbs.)	This Product RQ (lbs.)
Methyl methacrylate	1,000	>1,500

SARA Title III: Section 311/312 - Hazard Communication Standard (HCS): Per the June 13, 2016 Federal Register notice, EPA harmonized the EPCRA 311/312 hazard categories with the 2012 OSHA hazard communication standard for classifying and labeling of chemicals (i.e. GHS). Please refer to section 2 of the SDS to identify the appropriate hazard categories for reporting purposes.

SARA Title III: Section 313 Toxic Chemical List (TCL): This product does not contain any toxic chemicals for routine annual Toxic Chemical Release Reporting under section 313 (40 CFR 372).

Methyl methacrylate – CAS 80-62-6

TSCA Section 8(b) - Inventory Status: All chemical(s) comprising this product are listed on the TSCA inventory.

TSCA Section 12(b) - Export Notification: This product does not contain any chemicals which are subject to Section 12(b) export notification.

State Regulations:

California Proposition 65: This product does not expose you to chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

International Regulations:

WHMIS: Class B-2: Flammable liquid
Class D-2B: Material causing other toxic effects (Toxic)

International Lists:

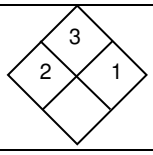
Australia Inventory (AICS):	all components are listed or exempt	Japan Inventory (ENCS):	all components are listed or exempt
Canadian Inventory (DSL):	all components are listed or exempt	Korea Inventory (KECI):	all components are listed or exempt

China Inventory (IECSC):	all components are listed or exempt	Taiwan (TCSI):	all components are listed or exempt
Philippines Inventory (PICCS):	all components are listed or exempt	New Zealand Inv. of Chem. (NZIoC):	all components are listed or exempt

16. OTHER INFORMATION

Hazardous Material Information System (HMIS) - USA	
Health	2
Flammability	3
Physical Hazards	1
Personal Protection	X*

National Fire Protection Association (USA):



*suggested minimum personal protection equipment. End user must determine appropriateness of these suggestions for their applications and usage conditions.

Reason Issued: update
Prepared By: Preston White **Approved By:** Chris Meyer Title: Vice President

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IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF PRODUCTS FOR THE USER'S PARTICULAR PURPOSE(S).

THIS PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

The product(s) has not been tested for, and is therefore not recommended for, uses for which prolonged contact with mucous membranes, abraded skin, or blood is intended; or for uses for which implantation within the human body is intended.