SAFETY DATA SHEET

OSHA HCS (29 CFR 1910.1200)

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Chemical Name	Mixture
Product Name **/** Trade Name	MAC-Guard™ R-Component
CAS No.	Mixture

Relevant identified uses of the substance or mixture and uses advised against

Identified Use(s)	Additive for Industrial Flooring Resin
Uses Advised Against	None

Details of the supplier of the safety data sheet

Company Identification	Res-Tek, Inc. 110 Riverside Drive Cartersville, Georgia 30120 United States of America
Telephone	1-888-737-8351 / 1-770-427-4034
Emergency telephone number	CHEMTREC 24 hr. 1-800-424-9300 / 1 (703) 527-3887 (Collect calls accepted)

SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

OSHA HCS (29 CFR 1910.1200) — Flam. Liq. 2; Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2; Skin Sens. 1; Resp. Sens. 1; STOT SE 3; STOT RE 1

Label elements

Hazard Symbol

Signal Word(s) — **DANGER**

Hazard Statement(s)

Highly flammable liquid and vapor.

Harmful if inhaled.

Causes skin irritation.

Causes serious eye irritation.

May cause an allergic skin reaction.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause respiratory irritation.

May cause damage to organs through prolonged or repeated exposure: Inhalation, respiratory system.

Precautionary Statement(s)	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Ground/bond container and receiving equipment. Use only non-sparking tools. Use explosion-proof electrical/ventilating/lighting/equipment. Keep container tightly closed. Wear protective gloves/eye protection/face protection. Do not breathe dust/fume/gas/mist/vapours/spray. Wash hands and exposed skin after use. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace.
Other hazards	Harmful to aquatic life. Harmful to aquatic life with long lasting effects.
Additional Information	None

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition/information on ingredients	%W/W	CAS No.	Hazard Statement(s)
Polyisocyanate	50 - 70	Trade Secret	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Resp. Sens. 1; H334 Skin Sens. 1; H317 STOT SE 3; H335 STOT RE 1; H372
4,4'-Methylenediphenyl diisocyanate (MDI)	10 - 25	101-68-8	
Methyl methacrylate	30 - 50	80-62-6	Flam. Liq. 2; H225 Skin Irrit. 2; H315 Skin Sens. 1; H317 STOT SE 3; H335
Oxygenation inhibitor	< 4	Trade Secret	Aquatic Acute 1; H400 Aquatic Chronic 1; H410

For full text of H phrases see section 16.

Additional Information - None

SECTION 4: FIRST AID MEASURES

Description of first aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing is labored, administer oxygen. If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
Skin Contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. If irritation (redness, rash, blistering) develops, get medical attention. Wash contaminated clothing before reuse.
Eye Contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.

Ingestion	Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.
Most important symptoms and effects, both acute and delayed	May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Indication of any immediate medical attention and special treatment needed	IF SWALLOWED: Immediately call a POISON CENTER/doctor.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

-Suitable Extinguishing Media	Extinguish with water spray, dry chemical, sand or carbon dioxide.
-Unsuitable Extinguishing Media	None anticipated.
Special hazards arising from the substance or mixture	In event of a spill, evacuate danger area. Water contamination of product will cause generation of carbon dioxide. Reacts vigorously with water at temperatures above 50 °C. Polymeric MDI decomposes rapidly above 204°C. Closed containers may rupture violently when heated. Forms: carbon monoxide,carbon dioxide, hydrogen cyanide, 4,4'-methylene dianiline, and nitrogen oxides.
Advice for fire-fighters	Fire fighters should wear complete protective clothing including self-contained breathing apparatus.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Eliminate all ignition sources if safe to do so. Put on protective equipment before entering danger area. Wear protective gloves/protective clothing/eye protection/face protection. In case of inadequate ventilation wear respiratory protection.
Environmental precautions	Contain spillages with sand, earth or any suitable adsorbent material. Do not allow to enter drains, sewers or watercourses.
Methods and material for containment and cleaning up	Contain spillages with sand, earth or any suitable adsorbent material. Transfer to a container for disposal or recovery. Wash the spillage area with water. If possible prevent water running into sewers.
Reference to other sections	None
Additional Information	None

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Ground/bond container and receiving equipment. Use only non-sparking tools. Use explosion-proof electrical / ventilating / lighting / equipment. Keep container tightly closed. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands and exposed skin after use. Do not breathe dust / fume / gas / mist / vapors / spray. Contaminated work clothing should not be allowed out of the workplace. Work in well ventilated zones or use proper respiratory protection.

Conditions for safe storage, including any incompatibilities

-Storage temperature	Store at room temperature. Keep container tightly closed and in a well-ventilated place. Keep away from heat and sources of ignition.
-Incompatible materials	Strong oxidising agents and amines. Water, acids, bases, amines, alcohols, organotin catalysts, amides, phenols, mercaptans, urethanes, ureas, sufactants and detergents, and metal compounds. All can react vigorously and violently with this material.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Occupational Exposure Limits

SUBSTANCE.	CAS No.	(8hr TWA)		(STEL)		Note:
		PEL (OSHA)	TLV (ACGIH)	PEL (OSHA)	TLV (ACGIH)	
Methyl methacrylate	80-62-6	100 ppm	50 ppm	-----	100 ppm	-----
2,6-di-tert-butyl-p-cresol	128-37-0	-----	2 mg/m3	-----	-----	IFV
4,4'-Methylenediphenyl diisocyanate	101-68-8	-----	0.005 ppm	0.02 ppm, ceiling	-----	-----

- STEL: Short Term Exposure Limit; IFV = Inhalable Fraction & Vapor

Exposure controls

Appropriate engineering controls — Work in well ventilated zones or use proper respiratory protection.

Personal protection equipment

Eye/face protection — Wear protective eyewear (goggles, face shield, or safety glasses).

Skin protection (Hand protection/ Other) — Gloves (Butyl rubber). Check with protective equipment manufacturer's data. Gloves should be changed regularly to avoid permeation problems.

Respiratory protection — In case of inadequate ventilation wear respiratory protection. Air-purifying respirator with organic vapor cartridges may provide sufficient protection. Check with protective equipment manufacturer's data.

Thermal hazards — Not normally required.

Environmental Exposure Controls — Do not allow to enter drains, sewers or watercourses.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Liquid
Color.	Brown.
Odor	Sweet Ester-like
Odor Threshold (ppm)	Not available.
pH (Value)	Not available.
Melting Point (°C) / Freezing Point (°C)	- 48 (-54 °F)
Boiling point/boiling range (°C):	100 (212 °F)
Flash Point (°C)	9 (48 °F)
Evaporation Rate	> 1 (Butyl acetate = 1)
Flammability (solid, gas)	Not applicable.
Explosive Limit Ranges	Not available.
Vapour pressure (mmHg)	37.8 @ 20 °C
Vapour Density (Air=1)	Not available
Density (g/ml)	0.94 @ 20 °C (7.86 lb/gal @ 20 °C)

Specific Gravity	0.94
Solubility (Water)	React slowly with water to liberate CO_2
Solubility (Other)	Not available.
Partition Coefficient (n-Octanol/water)	Not available.
Auto Ignition Point (°C)	430 (806 °F)
Decomposition Temperature (°C)	Not available.
Kinematic Viscosity (cSt)	~ 350 - 425 @ 20 °C (28 - 32 sec; No. 4 Zahn Cup)
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

Other information VOC Content: less than 100g/l

SECTION 10: STABILITY AND REACTIVITY

Reactivity Stable under normal conditions.

Chemical stability Stable.

Possibility of hazardous reactions Polymethylene polyphenyl isocyanate (PMDI) may undergo uncontrolled exothermic polymerization upon contact with incompatible materials or if heated above 175 - 204°C. The resulting pressure build-up could rupture closed conatiners. May cause some corrosion to copper alloys and aluminum.

Conditions to avoid Incompatible materials. Avoid contact with: heat and direct sunlight. Protect from moisture.

Incompatible materials Strong oxidising agents and amines. Water, acids, bases, amines, alcohols, organotin catalysts, amides, phenols, mercaptans, urethanes, ureas, sufactants and detergents, and metal compounds. All can react vigorously and violently with this material.

Hazardous decomposition product(s) Combustion or thermal decomposition will evolve toxic and irritant vapours; acrid smoke. Forms: carbon monoxide,carbon dioxide, hydrogen cyanide, 4,4'-methylene dianiline, and nitrogen oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes: Inhalation**,** Skin Contact**,** Eye Contact

Information on toxicological effects

Acute toxicity (estimated / calculated)	Oral: LD50: > 2000 mg/kg (rat) Dermal: LD50: > 2000 mg/kg (rat) Inhalation: 1.5 mg/L (ATE)
Corrosivity / Irritation	Causes skin irritation. Causes serious eye irritation.
Sensitization	May cause sensitization by skin contact. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Repeated dose toxicity	Causes damage to organs through prolonged or repeated exposure: Inhalation, respiratory system
Mutagenicity	Not to be expected.
Carcinogenicity	Not to be expected.

NTP	IARC	ACGIH	OSHA
No.	No.	No.	No.

Toxicity for reproduction	Not to be expected.
Other information	None known.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

Acute toxicity (estimated / calculated)	LC50 (96 hour): 10 - 100 mg/l (Fish) EC50 (48 hour): 10 - 100 mg/l (Daphnia magna)
Long Term Toxicity	Not available.

Persistence and degradability	Not readily biodegradable.
Bioaccumulative potential	The product has no potential for bioaccumulation.
Mobility in soil	The product has low mobility in soil.
Results of PBT and vPvB assessment	Not classified as PBT or vPvB.
Other adverse effects	None known.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods	Disposal should be in accordance with local, state or national legislation. Consult an accredited waste disposal contractor or the local authority for advice.
Additional Information	None known.

SECTION 14: TRANSPORT INFORMATION

	Land transport (U.S. DOT)	**Sea transport (IMDG)**	**Air transport (ICAO/IATA)**
UN number	UN 1993	UN 1993	UN 1993
Proper Shipping Name	Flammable liquid, n.o.s. (Methyl methacrylate)	Flammable liquid, n.o.s. (Methyl methacrylate)	Flammable liquid, n.o.s. (Methyl methacrylate)
Transport hazard class(es)	3	3	3
Packing group	II	II	II
Environmental hazards	Yes *	No	No
Special precautions for user	None assigned	None assigned	None assigned

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable

* Reportable Quantity (RQ) substance

SECTION 15: REGULATORY INFORMATION

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

TSCA (Toxic Substance Control Act) - Inventory Status**:** All components listed or polymer exempt.

Designated Hazardous Substances and Reportable Quantities (40 CFR 302.4):

Chemical Name	CAS No.	Typical %wt.	RQ (Pounds)
Methyl methacrylate	80-62-6	30 - 40	1000
4,4'-Methylenediphenyl diisocyanate	101-68-8	5 - 15	5000

SARA 311/312 - Hazard Categories:

☒ Fire ☐ Sudden Release ☐ Reactivity ☒ Immediate (acute) ☒ Chronic (delayed)

SARA 313 - Toxic Chemicals (40 CFR 372):

Chemical Name	CAS No.	Typical %wt.
Methyl methacrylate	80-62-6	30 - 40
Polymethylene polyphenyl isocyanate	9016-87-9	60 - 70
4,4'-Methylenediphenyl diisocyanate	101-68-8	5 - 15

SARA 302 - Extremely Hazardous Substances(40 CFR 355):

Chemical Name	CAS No.	Typical %wt.	RQ (Pounds)	TPQ (Pounds)
None	-----	-----	-----	-----

Proposition 65 (California):

Chemical Name	CAS No.	Typical %wt.	Hazards
None	-----	-----	-----

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: 1 - 16.

Date of preparation: January 26, 2016

Hazard Statement(s) Listed in: SECTION 3

H225: Highly flammable liquid and vapor.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.
H332: Harmful if inhaled.
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335: May cause respiratory irritation.
H372: Causes damage to organs through prolonged or repeated exposure: Inhalation
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.

Additional Information: None.

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