

Kit Components

Product code	Description
VTPB310	Vibra-TITE® Methacrylate Adhesives PB310 All Purpose - For Difficult-To-Bond; High Strength

Components:

VTPB310A	Vibra-TITE® Methacrylate Adhesives PB310 All Purpose - For Difficult-To-Bond; High Strength - Part A
VTPB310B	Vibra-TITE® Methacrylate Adhesives PB310 All Purpose - For Difficult-To-Bond; High Strength - Part B

Safety Data Sheet
acc. to OSHA HCS

Printing date 08/01/2017

Reviewed on 08/01/2017

1 Identification**- Product identifier****- Trade name:** Vibra-TITE® Methacrylate Adhesives**- Synonyms:** PB310 All Purpose - For Difficult-To-Bond; High Strength - Part A**- Part number:** VTPB310A**- Details of the supplier of the safety data sheet****- Manufacturer/Supplier:**ND Industries, Inc
1000 North Crooks Road
Clawson, MI 48017
USA
Telephone: +1-248-288-0000
Email: info@ndindustries.com
Website: www.ndindustries.com**- Information department:** Product safety department**- Emergency telephone number:**United States: 1-800-424-9300
International: +1-703-527-3887**2 Hazard(s) identification****- Classification of the substance or mixture**

GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

STOT SE 3 H335 May cause respiratory irritation.

- Label elements**- GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).**- Hazard pictograms**

GHS02 GHS07

- Signal word Danger**- Hazard-determining components of labeling:**methyl methacrylate
maleic anhydride
dimethylbenzyl hydroperoxide**- Hazard statements**

H225 Highly flammable liquid and vapor.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H335 May cause respiratory irritation.

- Precautionary statementsP210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.
P242 Use only non-sparking tools.
P261 Avoid breathing dust/fume/gas/mist/vapors/spray
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing must not be allowed out of the workplace.

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P280	Wear protective gloves/protective clothing/eye protection/face protection.
P280	Wear protective gloves.
P280	Wear eye protection / face protection.
P303+P361+P353	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER/doctor if you feel unwell.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

- Classification system:**- NFPA ratings (scale 0 - 4)**

1	3	0
Health = 1	Fire = 3	Reactivity = 0

- HMIS-ratings (scale 0 - 4)

HEALTH	1	Health = *1
FIRE	3	Fire = 3
REACTIVITY	0	Reactivity = 0

- Other hazards**- Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

*** 3 Composition/information on ingredients****- Chemical characterization: Mixtures**

- **Description:** Mixture of the substances listed below with nonhazardous additions.

- Dangerous components:

80-62-6	methyl methacrylate Flam. Liq. 2, H225; Skin Irrit. 2, H315; Skin Sens. 1, H317; STOT SE 3, H335	50-59%
	Impact modifying resin Skin Irrit. 2, H315	10-19%
108-31-6	maleic anhydride Resp. Sens. 1, H334; Skin Corr. 1B, H314; Acute Tox. 4, H302; Skin Sens. 1, H317	1-4%
128-37-0	Antioxidant Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2A, H319	1-4%
	Monofunctional acid ester Skin Irrit. 2, H315; Flam. Liq. 4, H227; Eye Irrit. 2B, H320	1-4%
80-15-9	dimethylbenzyl hydroperoxide Self-react. F, H242; Org. Perox. E, H242; Acute Tox. 3, H331; STOT RE 2, H373; Asp. Tox. 1, H304; Skin Corr. 1B, H314; Eye Dam. 1, H318; Acute Tox. 4, H302; Acute Tox. 4, H312; STOT SE 3, H335; Flam. Liq. 4, H227	≤1%

4 First-aid measures**- Description of first aid measures****- After inhalation:**

Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
Supply fresh air; consult doctor in case of complaints.

- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

- **After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

- **After swallowing:** If symptoms persist consult doctor.

- Information for doctor:

- **Most important symptoms and effects, both acute and delayed** No further relevant information available.

- **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

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Trade name: Vibra-TITE® Methacrylate Adhesives

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5 Fire-fighting measures

- Extinguishing media

- Suitable extinguishing agents:

CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
CO₂, sand, extinguishing powder. Do not use water.

- For safety reasons unsuitable extinguishing agents: Water with full jet

- **Special hazards arising from the substance or mixture** No further relevant information available.

- Advice for firefighters

- Protective equipment:

Wear self-contained respiratory protective device.
Wear fully protective suit.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

Wear protective clothing.

- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

- Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

Dispose of the collected material according to regulations.

- Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

- Protective Action Criteria for Chemicals

- PAC-1:

80-62-6	methyl methacrylate	17 ppm
108-31-6	maleic anhydride	0.2 ppm
80-15-9	dimethylbenzyl hydroperoxide	0.15 ppm
67762-90-7	Synthetic amorphous silica (fumed)	120 mg/m ³
130-15-4	1,4-naphthoquinone	0.57 mg/m ³

- PAC-2:

80-62-6	methyl methacrylate	120 ppm
108-31-6	maleic anhydride	2 ppm
80-15-9	dimethylbenzyl hydroperoxide	1.6 ppm
67762-90-7	Synthetic amorphous silica (fumed)	1,300 mg/m ³
130-15-4	1,4-naphthoquinone	6.3 mg/m ³

- PAC-3:

80-62-6	methyl methacrylate	570 ppm
108-31-6	maleic anhydride	20 ppm
80-15-9	dimethylbenzyl hydroperoxide	9.7 ppm
67762-90-7	Synthetic amorphous silica (fumed)	7,900 mg/m ³
130-15-4	1,4-naphthoquinone	38 mg/m ³

7 Handling and storage

- Handling:

- Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

- Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

- Conditions for safe storage, including any incompatibilities

- Storage:

- **Requirements to be met by storerooms and receptacles:** Store in a cool location.

- **Information about storage in one common storage facility:** Not required.

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- Further information about storage conditions:

Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.

- Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.**- Control parameters****- Components with limit values that require monitoring at the workplace:**

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.
At this time, the other constituents have no known exposure limits.

80-62-6 methyl methacrylate	
PEL	Long-term value: 410 mg/m ³ , 100 ppm
REL	Long-term value: 410 mg/m ³ , 100 ppm
TLV	Short-term value: 410 mg/m ³ , 100 ppm Long-term value: 205 mg/m ³ , 50 ppm DSEN
108-31-6 maleic anhydride	
PEL	Long-term value: 1 mg/m ³ , 0.25 ppm
REL	Long-term value: 1 mg/m ³ , 0.25 ppm
TLV	Long-term value: 0.01* mg/m ³ , 0.0025* ppm DSEN, RSEN;*inhalable fraction + vapor
128-37-0 Antioxidant	
REL	Long-term value: 10 mg/m ³
TLV	Long-term value: 2* mg/m ³ *as inhalable fraction and vapor
80-15-9 dimethylbenzyl hydroperoxide	
WEEL	Long-term value: 6 mg/m ³ , 1 ppm Skin

- Additional information: The lists that were valid during the creation were used as basis.**- Exposure controls****- Personal protective equipment:****- General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.

- Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

- Protection of hands:

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
Nitrile rubber, NBR

- Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- Eye protection:

Tightly sealed goggles

- Body protection: Protective work clothing

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Trade name: Vibra-TITE® Methacrylate Adhesives

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9 Physical and chemical properties

- Information on basic physical and chemical properties	
- General Information	
- Appearance:	
- Form:	Viscous
- Color:	Whitish
- Odor:	Pungent
- Odor threshold:	Not determined.
- pH-value:	Not determined.
- Change in condition	
- Melting point/Melting range:	Undetermined.
- Boiling point/Boiling range:	101°C (214 °F)
- Flash point:	10°C (50 °F)
- Flammability (solid, gaseous):	Not applicable.
- Ignition temperature:	430°C (806 °F)
- Decomposition temperature:	Not determined.
- Auto igniting:	Product is not selfigniting.
- Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
- Explosion limits:	
- Lower:	2.1 Vol %
- Upper:	12.5 Vol %
- Vapor pressure at 20°C (68 °F):	47 hPa (35 mm Hg)
- Density at 20°C (68 °F):	0.96 g/cm ³ (8.011 lbs/gal)
- Relative density	Not determined.
- Vapor density	Not determined.
- Evaporation rate	Not determined.
- Solubility in / Miscibility with	
- Water:	Not miscible or difficult to mix.
- Partition coefficient (n-octanol/water):	Not determined.
- Viscosity:	
- Dynamic at 20°C (68 °F):	60,000 mPas
- Kinematic:	Not determined.
- Solvent content:	
- VOC content:	0.00 % 0.0 g/l / 0.00 lb/gl
- Solids content:	40.8 %
- Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
 - **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
 - **Acute toxicity:**

- LD/LC50 values that are relevant for classification:		
80-62-6 methyl methacrylate		
Oral	LD50	7,872 mg/kg (rat)

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Impact modifying resin		
Oral	LD50	10,000 mg/kg (rat)
108-31-6 maleic anhydride		
Oral	LD50	400 mg/kg (rat)
Dermal	LD50	2,620 mg/kg (rabbit)
128-37-0 Antioxidant		
Oral	LD50	890 mg/kg (rat)
80-15-9 dimethylbenzyl hydroperoxide		
Oral	LD50	382 mg/kg (rat)
Dermal	LD50	500 mg/kg (rat)
Inhalative	LC50/4 h	220 mg/l (rat)

- Primary irritant effect:

- **on the skin:** Irritant to skin and mucous membranes.

- **on the eye:** Irritating effect.

- Sensitization:

- Sensitization possible through inhalation.

- Sensitization possible through skin contact.

- Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

Irritant

- Carcinogenic categories**- IARC (International Agency for Research on Cancer)**

80-62-6	methyl methacrylate	3
128-37-0	Antioxidant	3

- NTP (National Toxicology Program)

130-15-4	1,4-naphthoquinone	R
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- OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

12 Ecological information

- Toxicity

- **Aquatic toxicity:** No further relevant information available.

- **Persistence and degradability:** No further relevant information available.

- Behavior in environmental systems:

- **Bioaccumulative potential:** No further relevant information available.

- **Mobility in soil:** No further relevant information available.

- Additional ecological information:**- General notes:**

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- Results of PBT and vPvB assessment

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **Other adverse effects:** No further relevant information available.

13 Disposal considerations

- Waste treatment methods

- **Recommendation:** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- Uncleaned packagings:

- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- UN-Number

- **DOT, IMDG, IATA** UN1133

- UN proper shipping name

- **DOT** Adhesives

- **IMDG, IATA** ADHESIVES

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Trade name: Vibra-TITE® Methacrylate Adhesives

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- Transport hazard class(es)	
- DOT	
	
- Class	3 Flammable liquids
- Label	3
- IMDG, IATA	
	
- Class	3 Flammable liquids
- Label	3
- Packing group	
- DOT, IMDG, IATA	III
- Environmental hazards:	
- Marine pollutant:	No
- Special precautions for user	
- Danger code (Kemler):	Warning: Flammable liquids
- EMS Number:	-
- Stowage Category	F-E,S-D A
- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	
Not applicable.	
- Transport/Additional information:	
- DOT	
- Quantity limitations	On passenger aircraft/rail: 60 L On cargo aircraft only: 220 L
- IMDG	
- Limited quantities (LQ)	5L
- Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
- UN "Model Regulation":	
UN 1133 ADHESIVES, 3, III	

15 Regulatory information

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

- Section 355 (extremely hazardous substances):

None of the ingredients is listed.

- Section 313 (Specific toxic chemical listings):

80-62-6	methyl methacrylate
108-31-6	maleic anhydride
80-15-9	dimethylbenzyl hydroperoxide

- TSCA (Toxic Substances Control Act):

methyl methacrylate
maleic anhydride
Antioxidant
dimethylbenzyl hydroperoxide
Synthetic amorphous silica (fumed)
1,4-naphthoquinone

- Proposition 65

- Chemicals known to cause cancer:

None of the ingredients is listed.

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- Chemicals known to cause reproductive toxicity for females:	
None of the ingredients is listed.	
- Chemicals known to cause reproductive toxicity for males:	
None of the ingredients is listed.	
- Chemicals known to cause developmental toxicity:	
None of the ingredients is listed.	
- Carcinogenic categories	
- EPA (Environmental Protection Agency)	
80-62-6	methyl methacrylate E, NL
- TLV (Threshold Limit Value established by ACGIH)	
80-62-6	methyl methacrylate A4
108-31-6	maleic anhydride A4
128-37-0	Antioxidant A4
- NIOSH-Ca (National Institute for Occupational Safety and Health)	
None of the ingredients is listed.	
- Chemical safety assessment: A Chemical Safety Assessment has not been carried out.	

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Department issuing SDS: ND Industries, Inc. - Safety, Health and Environmental Affaires

- Contact: Safety, Health and Environmental Affaires

- Date of preparation / last revision 08/01/2017 / 8

- Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Flam. Liq. 2: Flammable liquids – Category 2

Flam. Liq. 4: Flammable liquids – Category 4

Self-react. F: Self-reactive substances and mixtures – Type E/F

Org. Perox. E: Organic peroxides – Type E/F

Acute Tox. 4: Acute toxicity – Category 4

Acute Tox. 3: Acute toxicity – Category 3

Skin Corr. 1B: Skin corrosion/irritation – Category 1B

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

Eye Irrit. 2B: Serious eye damage/eye irritation – Category 2B

Resp. Sens. 1: Respiratory sensitisation – Category 1

Skin Sens. 1: Skin sensitisation – Category 1

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

Asp. Tox. 1: Aspiration hazard – Category 1

- * Data compared to the previous version altered.

- Disclaimer

The information set forth is based on information that ND Industries, Incorporated believes to be accurate. No warranty, expressed or implied, is intended. The information is provided solely for your information and consideration and ND Industries Inc. assumes no legal responsibility for use or reliance thereon. In the event of a discrepancy between the information on the non-English document and its English counterpart, the English version shall supersede.

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1 Identification**- Product identifier****- Trade name:** Vibra-TITE® Methacrylate Adhesives**- Synonyms:** PB310 All Purpose - For Difficult-To-Bond; High Strength - Part B**- Part number:** VTPB310B**- Details of the supplier of the safety data sheet****- Manufacturer/Supplier:**ND Industries, Inc
1000 North Crooks Road
Clawson, MI 48017
USA
Telephone: +1-248-288-0000
Email: info@ndindustries.com
Website: www.ndindustries.com**- Information department:** Product safety department**- Emergency telephone number:**United States: 1-800-424-9300
International: +1-703-527-3887**2 Hazard(s) identification****- Classification of the substance or mixture**

GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

STOT SE 3 H335 May cause respiratory irritation.

- Label elements**- GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).**- Hazard pictograms**

GHS02 GHS07

- Signal word Danger**- Hazard-determining components of labeling:**

methyl methacrylate

- Hazard statements

H225 Highly flammable liquid and vapor.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H335 May cause respiratory irritation.

- Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

P261 Avoid breathing dust/fume/gas/mist/vapors/spray

P264 Wash face, hands and any exposed skin thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P272 Contaminated work clothing must not be allowed out of the workplace.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P280 Wear protective gloves.

P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

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Trade name: Vibra-TITE® Methacrylate Adhesives

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P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312	Call a POISON CENTER/doctor if you feel unwell.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

- Classification system:**- NFPA ratings (scale 0 - 4)**

1	3	0
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Health = 1
Fire = 3
Reactivity = 0

- HMIS-ratings (scale 0 - 4)

HEALTH 1	FIRE 3	REACTIVITY 0
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Health = 1
Fire = 3
Reactivity = 0

- Other hazards**- Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients**- Chemical characterization: Mixtures**

- **Description:** Mixture of the substances listed below with nonhazardous additions.

- Dangerous components:

80-62-6	methyl methacrylate	Flam. Liq. 2, H225; Skin Irrit. 2, H315; Skin Sens. 1, H317; STOT SE 3, H335	70-79%
	Impact modifying resin	Skin Irrit. 2, H315	10-19%
68411-20-1	Accelerator	Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Irrit. 2, H315; Eye Irrit. 2B, H320	1-4%
128-37-0	Antioxidant	Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2A, H319	≤1%

4 First-aid measures**- Description of first aid measures****- After inhalation:**

- Supply fresh air and to be sure call for a doctor.
- In case of unconsciousness place patient stably in side position for transportation.
- Supply fresh air; consult doctor in case of complaints.

- After skin contact: Immediately wash with water and soap and rinse thoroughly.**- After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.**- After swallowing:** If symptoms persist consult doctor.**- Information for doctor:**

- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures**- Extinguishing media****- Suitable extinguishing agents:**

- CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- CO₂, sand, extinguishing powder. Do not use water.

- For safety reasons unsuitable extinguishing agents: Water with full jet**- Special hazards arising from the substance or mixture** No further relevant information available.**- Advice for firefighters****- Protective equipment:**

- Wear self-contained respiratory protective device.
- Wear fully protective suit.

6 Accidental release measures**- Personal precautions, protective equipment and emergency procedures**

- Wear protective equipment. Keep unprotected persons away.
- Ensure adequate ventilation

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Keep away from ignition sources

Wear protective clothing.

- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents
Dispose of the collected material according to regulations.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

- PAC-1:

80-62-6	methyl methacrylate	17 ppm
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- PAC-2:

80-62-6	methyl methacrylate	120 ppm
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- PAC-3:

80-62-6	methyl methacrylate	570 ppm
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7 Handling and storage

- **Handling:**
 - **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
 - **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
 - **Storage:**
 - **Requirements to be met by storerooms and receptacles:** Store in a cool location.
 - **Information about storage in one common storage facility:** Not required.
 - **Further information about storage conditions:**
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
 - **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
 - **Components with limit values that require monitoring at the workplace:**
The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.
At this time, the other constituents have no known exposure limits.

80-62-6 methyl methacrylate

PEL	Long-term value: 410 mg/m ³ , 100 ppm
REL	Long-term value: 410 mg/m ³ , 100 ppm
TLV	Short-term value: 410 mg/m ³ , 100 ppm Long-term value: 205 mg/m ³ , 50 ppm
DSEN	

128-37-0 Antioxidant

REL	Long-term value: 10 mg/m ³
TLV	Long-term value: 2* mg/m ³ *as inhalable fraction and vapor

- **Additional information:** The lists that were valid during the creation were used as basis.

- **Exposure controls**
 - **Personal protective equipment:**
 - **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the skin.
Avoid contact with the eyes and skin.

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- Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

- Protection of hands:

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Nitrile rubber, NBR

- Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- Eye protection:

Tightly sealed goggles

- Body protection: Protective work clothing

* 9 Physical and chemical properties

- Information on basic physical and chemical properties	
- General Information	
- Appearance:	
- Form:	Viscous
- Color:	Whitish
- Odor:	Pungent
- Odor threshold:	Not determined.
- pH-value:	Not determined.
- Change in condition	
- Melting point/Melting range:	Undetermined.
- Boiling point/Boiling range:	101°C (214 °F)
- Flash point:	10°C (50 °F)
- Flammability (solid, gaseous):	Not applicable.
- Ignition temperature:	430°C (806 °F)
- Decomposition temperature:	Not determined.
- Auto igniting:	Product is not selfigniting.
- Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
- Explosion limits:	
- Lower:	2.1 Vol %
- Upper:	12.5 Vol %
- Vapor pressure at 20°C (68 °F):	47 hPa (35 mm Hg)
- Density at 20°C (68 °F):	1.25 g/cm ³ (10.431 lbs/gal)
- Relative density	Not determined.
- Vapor density	Not determined.
- Evaporation rate	Not determined.
- Solubility in / Miscibility with	
- Water:	Not miscible or difficult to mix.
- Partition coefficient (n-octanol/water): Not determined.	
- Viscosity:	
- Dynamic at 20°C (68 °F):	100,000 mPas
- Kinematic:	Not determined.

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- Solvent content:	
- VOC content:	0.00 % 0.0 g/l / 0.00 lb/gl
- Solids content:	26.7 %
- Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
 - **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
 - **Acute toxicity:**

- LD/LC50 values that are relevant for classification:	
80-62-6 methyl methacrylate	
Oral	LD50 7,872 mg/kg (rat)
Impact modifying resin	
Oral	LD50 10,000 mg/kg (rat)
68411-20-1 Accelerator	
Oral	LD50 500 mg/kg (ATE)
Dermal	LD50 1,100 mg/kg (ATE)
128-37-0 Antioxidant	
Oral	LD50 890 mg/kg (rat)

- **Primary irritant effect:**
 - **on the skin:** Irritant to skin and mucous membranes.
 - **on the eye:** No irritating effect.
- **Sensitization:** Sensitization possible through skin contact.

- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

- **Carcinogenic categories**

- IARC (International Agency for Research on Cancer)	
80-62-6 methyl methacrylate	3
128-37-0 Antioxidant	3

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

12 Ecological information

- **Toxicity**
 - **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
 - **Bioaccumulative potential** No further relevant information available.
 - **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
 - **General notes:**
 - Water hazard class 1 (Self-assessment): slightly hazardous for water
 - Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
 - **PBT:** Not applicable.
 - **vPvB:** Not applicable.

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- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**- **Recommendation:** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.- **Uncleaned packagings:**- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- UN-Number - DOT, IMDG, IATA	UN1133
- UN proper shipping name - DOT - IMDG, IATA	Adhesives ADHESIVES
- Transport hazard class(es) - DOT	
	
- Class - Label	3 Flammable liquids 3
- IMDG, IATA	
	
- Class - Label	3 Flammable liquids 3
- Packing group - DOT, IMDG, IATA	III
- Environmental hazards: - Marine pollutant:	No
- Special precautions for user - Danger code (Kemler): - EMS Number: - Stowage Category	Warning: Flammable liquids - F-E,S-D A
- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
- Transport/Additional information: - DOT - Quantity limitations	On passenger aircraft/rail: 60 L On cargo aircraft only: 220 L
- IMDG - Limited quantities (LQ) - Excepted quantities (EQ)	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
- UN "Model Regulation":	UN 1133 ADHESIVES, 3, III

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**- **Sara**- **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

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- Section 313 (Specific toxic chemical listings):		
80-62-6	methyl methacrylate	
13395-16-9	copper(II) 4-oxopent-2-en-2-olate	
- TSCA (Toxic Substances Control Act):		
methyl methacrylate		
Accelerator		
Antioxidant		
copper(II) 4-oxopent-2-en-2-olate		
- Proposition 65		
- Chemicals known to cause cancer:		
None of the ingredients is listed.		
- Chemicals known to cause reproductive toxicity for females:		
None of the ingredients is listed.		
- Chemicals known to cause reproductive toxicity for males:		
None of the ingredients is listed.		
- Chemicals known to cause developmental toxicity:		
None of the ingredients is listed.		
- Carcinogenic categories		
- EPA (Environmental Protection Agency)		
80-62-6	methyl methacrylate	E, NL
- TLV (Threshold Limit Value established by ACGIH)		
80-62-6	methyl methacrylate	A4
128-37-0	Antioxidant	A4
- NIOSH-Ca (National Institute for Occupational Safety and Health)		
None of the ingredients is listed.		
- Chemical safety assessment: A Chemical Safety Assessment has not been carried out.		

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Department issuing SDS: ND Industries, Inc. - Safety, Health and Environmental Affaires

- Contact: Safety, Health and Environmental Affaires

- Date of preparation / last revision 08/01/2017 / 9

- Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 IMDG: International Maritime Code for Dangerous Goods
 DOT: US Department of Transportation
 IATA: International Air Transport Association
 ACGIH: American Conference of Governmental Industrial Hygienists
 EINECS: European Inventory of Existing Commercial Chemical Substances
 ELINCS: European List of Notified Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 NFPA: National Fire Protection Association (USA)
 HMIS: Hazardous Materials Identification System (USA)
 VOC: Volatile Organic Compounds (USA, EU)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 vPvB: very Persistent and very Bioaccumulative
 NIOSH: National Institute for Occupational Safety
 OSHA: Occupational Safety & Health
 TLV: Threshold Limit Value
 PEL: Permissible Exposure Limit
 REL: Recommended Exposure Limit
 Flam. Liq. 2: Flammable liquids – Category 2
 Acute Tox. 4: Acute toxicity – Category 4
 Skin Irrit. 2: Skin corrosion/irritation – Category 2
 Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
 Eye Irrit. 2B: Serious eye damage/eye irritation – Category 2B
 Skin Sens. 1: Skin sensitisation – Category 1
 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

- * Data compared to the previous version altered.

- Disclaimer

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