Safety Data Sheet

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

- **Product name** – TGB Bond Base

1.2. Relevant identified uses of the mixture and uses advised against

- Application of nail polish

1.3. Details of the supplier of the safety data sheet

- SMC Manufacturing (UK) Ltd
  Unit 2, Inverbreakie Steading,
  Inverbreakie Industrial Estate,
  Invergordon
  Ross-shire
  IV18 0LP
  UK
  Tel: +44(0)1349 344 082
  E-mail: Adrian.hewitt@smc-manufacturing.com
  Emergency telephone number
- +44(0)1349 344 082 (0830-1700)

SECTION 2: Hazards identification

2.1. Classification of the mixture

Classification according to regulation (EC) No.1272/2008

Hazard Class	Hazard Category	Hazard Statements
Aquatic Environment Acute	Category 1	H400
Aquatic Environment Long-term	Category 1	H410
Serious Eye Damage I Eye Irritation	Category 1	H319
Skin sensitization	Category 1	H317
Chronic aquatic toxicity	Category 2	H411
Skin Corrosion/ Irritation	Category 2	H315

For the full text of the H-Statements mentioned in this section, see Section 16.

- **Primary route of exposure** – skin or eye contact,
- **Most important adverse effects** – skin or eye irritation or sensitization
- **Human Health – see section 11 for toxicological information**
- **Physical and Chemical Hazards – see section 9 for physiochemical information**
- **Potential Environmental Effects – see section 12 for environmental information**

2.2. Label elements

Labelling according to regulation (EC) No. 1272/2008

Hazard symbols:

GHS05

GHS07

GHS09

Signal word: Danger

Hazard statements:

H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H319	Causes serious eye irritation
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with lasting effects

Precautionary statements

Prevention	P261	Avoid breathing dust/fume/gas/mist/vapours/ spray.
	P262	Do not get in eyes, on skin, or on clothing.
	P264	Wash face, hands and any exposed skin thoroughly after handling
	P272	Contaminated work clothing should not be allowed out of the workplace.
	P273	Avoid release to the environment.
	P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection
	P302+P352	IF ON SKIN: Wash with plenty of soap and water.
	P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
	EUH208	Contains 1,2-ethanediyl diacrylate. May produce an allergic reaction.
Response	P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P310	Immediately call a POISON CENTER or doctor/physician.
	P321	Specific treatment (see supplemental first aid instructions on this label).
Storage	P362+P364	Take off contaminated clothing and wash it before reuse.
	P332+P313	If skin irritation or rash occurs: Get medical advice/attention
	P337+P313	If eye irritation persists: Get medical advice/ attention.
	P363	Wash contaminated clothing before reuse
	P391	Collect spillage
	P501	Dispose of contents/container in accordance with local and national regulations

2.3. Other hazards

- Polymerization may occur from excessive heat, contamination or exposure to direct sunlight
- Avoid skin contact
- Contact with skin may cause a cross-allergic reaction in persons already sensitized to acrylates

SECTION 3: Composition/information on ingredients

3.2 Mixtures

This product is a mixture.

INCI name	CAS no	EINECS No.	BANDED %	Classification (Regulation EC 1272/2008	
BIS-HEA Poly(1,4-Butanediol)-9/IPDI Copolymer	-	-	50-60	Skin Irrit 2	H315
				Eye Irrit. 2	H319
PEG-4 Trimethylolpropane Triacrylate	28961-43-5	500-066-5	10-20	Eye Irrit. 2	H319
				Skin Sens. 1	H317
Hydroxypropyl Methacylate	27813-02-1	248-663-3	10-20	Eye Irrit. 2	H319
				Skin Sens. 1	H317
Bis(Pentaerythrityl Triacrylate) Pentaerythrityl Diacrylate/IPDI Copolymer	-	-	5-10	Eye Irrit. 2	H319
Bis-HEA Polycaprolactone Trimethylhexyl/Hexyl Dicarbamate			1-5	Skin Irrit 2	H315
				Eye Irrit. 2	H319
Pentaerythrityl Tetramercaptopropionate	7575-23-7	231-472-8	1-5	Acute Tox 4	H302
				Skin Sens. 1	H317
				Aquatic Acute 1	H400
Pentaerythrityl Tetraacrylate/Pentaerythrityl Triacrylate	1245638-61-2 ; 4986-89-4	-	1-5	Acute Tox 4	H302
				Skin Irrit 2	H315
				Eye Damage1	H318
				Skin Sens. 1	H317
				Aquatic Chronic 2	H411
Ethyl Trimethylbenzoyl Phenylphosphinate	84434-11-7	282-810-6	1-5	Skin Sens. 1	H317
				Aquatic Chronic 2	H411
1,2-Ethanediyl Diacrylate	2274-11-5	218-886-4	>1	Acute Tox 3	H301
				Acute Tox 3	H311
				Skin Irrit 2	H315
				Eye Damage1	H318
				Skin Sens. 1	H317

For the full text of the H-Statements mentioned in this section, see Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

- **General advice**
  - Take off immediately all contaminated clothing. Wash contaminated clothing before use.
  - In all cases of doubt, or when symptoms persist, seek medical advice
  - Never give anything by mouth to an unconscious person
- **Inhalation**
  - Remove to fresh air. If breathing is difficult, give oxygen.
  - Apply artificial respiration if patient is not breathing.
  - Obtain medical attention immediately.
- **Skin Contact**
  - Wash immediately with plenty of water and soap.
  - Remove contaminated clothing and shoes without delay.
  - Obtain medical attention. Do not reuse contaminated clothing without laundering. Destroy or thoroughly clean shoes before reuse.
  - If skin irritation or rash occurs, seek medical advice
- **Eye Contact**
  - Rinse immediately with plenty of water for at least 15 minutes. Obtain medical attention immediately.
- **Ingestion**
  - If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

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4.2. Most important symptoms and effects, both acute and delayed

- **None known**

4.3. Indication of any immediate medical attention and special treatment needed

Note to physicians General Information

In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person

SECTION 5: Firefighting measures

5.1. Extinguishing media

- **Suitable extinguishing media**
  - Use water spray or fog, carbon dioxide or dry chemical.
- **Unsuitable extinguishing media**
  - High volume water jet

5.2. Special hazards arising from the mixture

- **Specific hazards during fire fighting**
  - Keep containers cool by spraying with water if exposed
  - Formation of toxic gases is possible during heating or in fires.
  - The product may undergo spontaneous polymerization at high temperatures.
  - Polymerization is exothermic and may cause damage to the container and/or release of thermal decomposition products.

5.3. Advice for firefighters

- **Special protective equipment**
  - Firefighters, and others exposed, wear self-contained breathing apparatus.
  - Wear full firefighting protective clothing.
  - See SDS Section 8 (Exposure Controls/Personal Protection).
- **Further advice**
  - Cool closed containers with water spray / fog
  - Heating will cause pressure rise with risk of bursting
  - Collect contaminated fire extinguishing water separately; do not discharge to drains

SECTION 6: Accidental release measure

6.1. Personal precautions, protective equipment and emergency procedures

- Use personal protective equipment
- Provide adequate ventilation
- Keep away from heat and sources of ignition
- Avoid contact with skin, eyes and clothing
- Do not breathe vapours or mist

6.2. Environmental precautions

- Do not flush into surface water or sanitary sewer system
- Avoid subsoil penetration
- If the product contaminates rivers and lakes or drains inform respective authorities

6.3. Methods and material for containment and cleaning up

- Contain spillage
- Ground and bond all containers and handling equipment
- Collect with non-combustible absorbent material
- Place in container for disposal according to local / national regulations

6.4. Reference to other sections

- For personal protection refer to Section 8
- For disposal according to local / national regulations refer to Section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Avoid contact with skin and eyes
- Use personal protective equipment; avoid contact with skin, eyes and clothing
- Ensure adequate ventilation; do not breathe vapors or mist
- Emergency eye wash fountains and emergency showers should be available in the immediate vicinity
- No smoking, naked-flames or sources of ignition; electrical equipment must be approved for use in a potentially explosive atmosphere
- Limit the quantity of product in the workplace to a minimum
- Wash thoroughly after use
- Avoid release into the environment

7.2. Conditions for safe storage, including any incompatibilities

- Keep container tightly closed
- Store within a bunded area
- Store in original container in a dry, cool, and well-ventilated place
- Keep away from direct sunlight and excessive heat to prevent polymerization
- Store at 4-30ºC
- Storage Class (TRGS 510): 10

7.3. Specific end use(s)

- No information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

PEG-4 Trimethylolpropane Triacrylate (28961-43-5)

Use	Route	DNEL	Units	Effects Type
Industrial	Dermal	0.8	mg/kg/day	Long term, systemic
Industrial	inhalation	16.2	mg/m3	Long term, systemic
General Population	Dermal	0.48	mg/kg/day	Long term, systemic
General Population	inhalation	4.9	mg/m3	Long term, systemic
General Population	Oral	1.39	mg/kg/day	Long term, systemic

Pentaerythrityl Tetramercaptopropionate (7575-23-7)

Use	Route	DNEL	Units	Effects Type
Worker	inhalation	1.74	mg/m_3	Long term, systemic
Worker	inhalation	40.13	mg/m_3	Long term, local
Worker	Inhalation	40.13	mg/m_3	Short term, local
Worker	Dermal	5	mg/kg/day	Long term, systemic
General Population	inhalation	0.43	mg/m_3	Long term, systemic
General Population	inhalation	20.07	mg/m_3	Long term, local
General Population	inhalation	20.07	mg/m_3	Short term, local
General Population	Dermal	2.5	mg/kg/day	Long term, systemic
General Population	Oral	0.25	mg/kg/day	Long term, systemic

Hydroxypropyl Methacylate 27813-02-1

workers	Skin contact	4.2	mg/kg	Chronic effects
workers	Inhalation	14.7	mg/m3	Chronic effects
consumers	Skin contact	2.5	mg/kg	Chronic effects
consumers	Inhalation	8.8	mg/m3	Chronic effects
consumers	Ingestion	2.5	mg/kg	Chronic effects

Predicted No Effect Concentration (PNEC):

Pentaerythrityl Tetraacrylate/Pentaerythrityl Triacrylate (1245638-61-2)

Compartment	PNEC	Units
Fresh water	0.0032	mg/l
Marine water	0.0003	mg/l
Intermittent water release	0.032	mg/l
Sediment (fresh water)	1.73	mg/kg
Sewage treatment plant	10	mg/l
Soil	0.34	mg/kg

8.2. Exposure controls

- **Engineering controls**
  - Monitor airborne levels in and surrounding the workplace
  - Use engineering controls to maintain airborne level below exposure limits
  - Local exhaust ventilation may be necessary
  - If airborne levels exceed exposure limits then respiratory protection should be worn
  - Where this material is not used in a closed system, good enclosure and local exhaust ventilation should be provided to control exposure.

- **Personal Protection**
    - Respiratory protection
        - Use an CE approved respirator with organic vapour cartridge with a particulate pre-filter, type A(BP>65
    - Eye protection
        - Use chemical goggles consistent with EN 166 or equivalent
        - Eyewash equipment and safety shower should be provided in areas of potential exposure.
    - Hand protection
        - Use chemical resistant gloves consistent with EN 374 or equivalent
    - Skin protection
        - Use chemical resistant anti-static clothing
    - Hygiene
        - Handle in accordance with good industrial hygiene
        - Keep workplace clean and tidy as much as possible
        - Keep away from food, drink and animal feed
        - Wash hands and change clothes before and after each work shift
- **Environmental Protection**
    - Refer to Section 6, 7 and 13

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	: viscous liquid
Colour	: colourless / amber / pigmented
Odour	: Characteristic
Odour threshold	: no data available
pH	: not applicable
Boiling point / range	: >100°C
Flash point	: Not Applicable
Evaporation rate	: Not Applicable
Flammability (solid, gas)	: Not Applicable
Explosion limits (%V)	: Not Applicable
Vapour pressure	: no data available
Relative vapour pressure	: no data available
Relative density (g/cm^3 @ 20°C)	: 1.05-1.2
Water solubility	: immiscible
Partition coefficient: n-octanol/water	: no data available
Auto-ignition temperature	: no data available
Decomposition temperature	: no data available
Viscosity	: variable
Explosive properties	: none
Oxidising properties	: no data available

9.2. Other information

- No further data available

SECTION 10: Stability and reactivity

10.1. Reactivity

- Polymerizes readily unless inhibited. Polymerization is highly exothermic and, if not controlled, may be violent

10.2. Chemical stability

- Stable under recommended storage conditions. See Section 7

10.3. Possibility of hazardous reactions

- Polymerisation may occur
- Uncontrolled polymerization may cause rapid evolution of heat and increase in pressure that could result in violent rupture of sealed storage vessels or containers. Hazardous polymerization can occur when exposed to direct sunlight. Hazardous exothermic polymerization can occur when heated. Avoid contact with vinyl polymerization initiators. Excessive heat. Avoid contact with isocyanates and oxidizing agents. Avoid contact with free radical initiators.

10.4. Conditions to avoid

- Avoid contamination with metallic impurities and peroxides.
- Avoid direct exposure to sunlight.
- Avoid temperatures above 60°C (140°F).
- All sources of ignition.
- Elevated temperatures.
- Loss of dissolved air.
- Loss of polymerization inhibitor

10.5. Incompatible materials

- Peroxides, metallic compounds, strong oxidizing agents, Strong oxidizing agents and strong bases, bases, avoid prolonged contact with light, Copper, copper alloys, carbon steel, iron and rust, They give an exothermic reaction with the product, Unintentional contact with them should be avoided, Hazardous polymerization may occur
-

10.6. Hazardous decomposition products

- Decomposition products can include and not limited to hydrogen cyanide, nitrogen oxides, carbon oxides, hydrocarbons and soot

SECTION 11: Toxicological information

11.1 Information on toxicological effect.

Likely Routes of Exposure: Skin, Eyes, Oral.

Acute toxicity - oral: Not Classified • Based on available data and/or professional judgment, the classification criteria are not met.
Acute toxicity• dermal: Not Classified • Based on available data and/or professional judgment, the classification criteria are not met.
Acute toxicity• inhalation: Not Classified • Based on available data and/or professional judgment, the classification criteria are not met.

Skin corrosion / irritation: Not Classified • Based on available data and/or professional judgment, the classification criteria are not met.

Serious eye damage / eye irritation: Causes serious eye damage

Respiratory sensitization: Not Classified • Based on available data and/or professional judgment, the classification criteria are not met.

Skin sensitization: May cause an allergic skin reaction

Carcinogenicity: Not Classified. • Based on available data and/or professional judgment, the classification criteria are not met.

Germ cell mutagenlcity: Not Classified. • Based on available data and/or professional judgment, the classification criteria are not met.

Reproductive toxicity: Not Classified. • Based on available data and/or professional judgment, the classification criteria are not met.

Specific target organ toxicity (STOT) • single exposure: Not Classified. • Based on available data and/or professional judgment, the classification criteria are not met.

Specific target organ toxicity (STOT) • repeated exposure: Not Classified. • Based on available data and/or professional judgment, the classification criteria are not met.

Aspiration hazard: Not Classified - Based on available data and/or professional judgment, the classification criteria are not met.

PRODUCT TOXICITY INFORMATION

ACUTE TOXICITY DATA

oral	rat	Acute LOSO	> 2000 mg/kg
dermal	rabbit	Acute LOSO	> 2000 mg/kg
inhalation	rat	Acute LCS0 4 hr	> S mg/I (Dust/Mist)

LOCAL EFFECTS ON SKIN AND EYE

Acute Irritation	eye	Irritating
Acute Irritation	dermal	Not irritating

ALLERGIC SENSITIZATION

Sensitization	Skin	Sensitizing
Sensitization	respiratory	No data

GENOTOXICITY

Assays for Gene Mutations

Ames Salmonella Assay No data

OTHER INFORMATION

The product toxicity information above has been estimated.
The toxicological properties of this material have not been fully determined.
Prolonged or repeated contact with skin or mucous membrane may result in irritation symptoms such as redness, blistering, dermatitis, etc.
The inhalation of airborne droplets or aerosols may cause irritation of the respiratory tract.

SECTION 12: Ecological information

12.1. Toxicity

- There is no data available for the product itself

12.2. Persistence and degradability

- No data available

12.3. Bio accumulative potential

- No data available

12.4. Mobility in soil

- No data available

12.5. Results of PBT and vPvB assessment

- No data available

12.6. Other adverse effects

- No data available

Hazardous Ingredient Toxicity Data

Component / CAS No.	Toxicity to Fish
Ethoxylated trimethylolpropane triacrylate 28961-43-5	LC50 = 1.95 mg/I - Zebra Fish (Brachydanio rerio) 96h
Pentaerythritol trakis(3-mercaptopropionate) 7575-23-7	LC50 = 0.034 mg/I - Oncorhynchus mykiss (96h)
2-Propenolc acid, reaction products with pentaerythritol (1245638-61-2)	LCSO = 3.2 mg/I - Carp - 96 hr
Acrylic acid (79-10-7)	LCSO = 27 mg/L - Salmo gairdneri (96h)
Polyurethane resin (-)	Not available

Component / CAS No.	Toxicity to Water Flea
Ethoxylated trimethylolpropane triacrylate 28961-43-5	EC50 70.7 mg/L - Daphnia magna (48h)
Pentaerythritol trakis(3-mercaptopropionate) 7575-23-7	EC50 > 0.35 mg/I - Daphnia Magna (48h)
2-Propenolc acid, reaction products with pentaerythritol (1245638-61-2)	EC50 =13 mg/l water flea 48hr
Acrylic acid (79-10-7)	EC50 = 47 mg/L - Daphnia magna (48h) EC50 = 95 mg/L - Daphnia magna (48h) NOEC = 12-19 m /L- Da hnia ma na 21d
Polyurethane resin (-)	Not Available

Component / CAS No.	Toxicity to Algae
Ethoxylated trimethylolpropane triacrylate 28961-43-5	ErC50 = 2.2 mg/I - Green Algae (Desmodesmus subs icatus 72h
Pentaerythritol trakis(3-mercaptopropionate) 7575-23-7	EC50 > 0.12 mg/L - Desmodesmus subspicatus (72h) NOEC = 0.12 mg/L - Desmodesmus subspicatus 72h
2-Propenolc acid, reaction products with pentaerythritol (1245638-61-2)	EL50 = 33 mg/I - Pseudokirchneriella subcapitata - 24-96 hr NOELR = 10 mg/I - Pseudokirchneriella subcapitata - 24-96 hr
Acrylic acid (79-10-7)	EC50 = 0.13 mg/L - Scenedesmus subspicatus (72h)
	EC10 = 0.03 mg/L - Scenedesmus subspicatus (72h)
Polyurethane resin (-)	Not available

Component / CAS No.	Partition coefficient
Ethoxylated trimethylolpropane triacrylate 28961-43-5	Not available
Pentaerythritol trakis(3-mercaptopropionate) 7575-23-7	Not available
2-Propenolc acid, reaction products with pentaerythritol (1245638-61-2)	Log Kow = 3.11
Acrylic acid (79-10-7)	0.38-0.46
Polyurethane resin (-)	Not available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

- This product should be treated as hazardous waste according to EC 2008/98/EC
- Use authorised waste disposal services in compliance with all national, provincial, municipal or local laws
- Do not dispose of together with normal waste
- Do not dispose of into the environment, drains or sanitary sewer
- Do not burn or use cutting torch on empty drum
- Empty drums for storage or transport should continue to be labelled as flammable, class 3

SECTION 14: Transport information

Classification for Road and Rail Transport (ADR/RID)

14.1. UN number

- UN3082

14.2. UN proper shipping name

- ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (MERCAPTO DERIVATIVE)

14.3. Transport hazard class(es)

- Class 9

14.4. Packing group

- III

14.5. Environmental hazards

- No information available

14.6. Special precautions for user

- Protect against external heat sources above +30C

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

- No information available

14.8. Other shipping information

- Limited Quantity 5L
- Excepted Quantity E1 30g/ml per inner 1000g/ml per outer

Classification for Sea Transport (IMDG)

14.1. UN number

- UN3082

14.2. UN proper shipping name

- ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (MERCAPTO DERIVATIVE)

14.3. Transport hazard class(es)

- Class 9

14.4. Packing group

- III

14.5. Environmental hazards

- Marine Pollutant

14.6. Special precautions for user

- Protect against external heat sources above +30C

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

- No information available

14.8. Other shipping information

- Limited Quantity 5L
- Excepted Quantity E1 30g/ml per inner 1000g/ml per outer

Classification for Air Transport (IATA/ICAO)

14.1. UN number

- UN3082

14.2. UN proper shipping name

- ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (MERCAPTO DERIVATIVE)

14.3. Transport hazard class(es)

- Class 9

14.4. Packing group

- III

14.5. Environmental hazards

- No information available

14.6. Special precautions for user

- Protect against external heat sources above +30C

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

- No information available

14.8. Other shipping information

- Limited Quantity 5L
- Excepted Quantity E1 30g/ml per inner 1000g/ml per outer

Environmentally Hazardous Substance with Limited Quantity of 5L and Excepted Quantity of E1 (30ml per inner, 1000ml per outer).

SECTION 15: Regulatory information

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

- This mixture contains only components that have been either pre-registered, registered, are exempt from registration, are regarded as registered or are not subject to registration according to Regulation (EC) No. 1907/2006 (REACH)

15.2. Chemical safety assessment

- Not applicable

SECTION 16: Other information

Full text of H-statements referred to previously in document:

- H315 Causes skin irritation
- H317 May cause an allergic skin reaction
- H318 Causes serious eye damage
- H319 Causes serious eye irritation
- H400 Very toxic to aquatic life
- H410 Very toxic to aquatic life with lasting effects

SMC Manufacturing (UK) Ltd urges each customer or recipient of this material safety data sheet to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained herein and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. No warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws.