



UTENSIL BONDING AGENT B1

Safety Data Sheet PP1-USB1

Date of issue: 12/24/2014

Revision date: 07/13/2015

Version: 1.0

SECTION 1: Identification

1.1. Identification

Product name	: UTENSIL BONDING AGENT B1
Product code	: PP1-USB1
Product form	: Substance
Physical state	: Liquid
Synonyms	: TETRAMETHYLAMMONIUM SILOXANOLATE in hexamethyldisiloxane
Chemical family	: ORGANOSILOXANE BLEND

1.2. Recommended use and restrictions on use

No additional information available

1.3. Supplier

GELEST, INC.

11 East Steel Road
Morrisville, PA 19067

USA

T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST

info@gelest.com - www.gelest.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Flammable liquids Category 2	H225	Highly flammable liquid and vapour
Acute toxicity (oral) Category 4	H302	Harmful if swallowed
Acute toxicity (dermal) Category 3	H311	Toxic in contact with skin
Skin corrosion/irritation Category 2	H315	Causes skin irritation
Serious eye damage/eye irritation Category 2A	H319	Causes serious eye irritation
Specific target organ toxicity (single exposure) Category 1	H370	Causes damage to organs (central nervous system)
Specific target organ toxicity (repeated exposure) Category 1	H372	Causes damage to organs (liver, thymus) through prolonged or repeated exposure (Dermal)

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H225 - Highly flammable liquid and vapour
H302 - Harmful if swallowed
H311 - Toxic in contact with skin
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H370 - Causes damage to organs (central nervous system)
H372 - Causes damage to organs (liver, thymus) through prolonged or repeated exposure (Dermal)

Precautionary statements (GHS-US) :

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. open flames, sparks, ignition sources
P233 - Keep container tightly closed.
P240 - Ground/Bond container and receiving equipment

UTENSIL BONDING AGENT B1

Safety Data Sheet

P241 - Use explosion-proof electrical, lighting, ventilating equipment
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P260 - Do not breathe vapors.
P264 - Wash hands, forearms and face thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear eye protection, face protection, protective clothing, protective gloves.
P301+P312 - If swallowed: Call a doctor, a POISON CENTER if you feel unwell
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/shower
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P307+P311 - If exposed: Call a poison center/doctor
P312 - Call a doctor, a POISON CENTER if you feel unwell
P314 - Get medical advice/attention if you feel unwell.
P321 - Specific treatment (see first aid instructions on this label)
P330 - Rinse mouth.
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P361 - Take off immediately all contaminated clothing.
P362 - Take off contaminated clothing and wash before reuse.
P363 - Wash contaminated clothing before reuse.
P370+P378 - In case of fire: Use dry powder, foam, Water spray, sand to extinguish.
P403+P235 - Keep in a cool place
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Hazards not otherwise classified (HNOC)

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type : Multi-constituent
Name : UTENSIL BONDING AGENT B1

Name	Product identifier	%	GHS-US classification
Hexamethyldisiloxane	(CAS-No.) 107-46-0	60 - 100	Flam. Liq. 2, H225 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
Tetramethylammonium siloxanolate	(CAS-No.) 68440-88-0	10 - 30	Flam. Liq. 4, H227 Skin Corr. 1C, H314 Eye Dam. 1, H318
Tetramethylammonium hydroxide	(CAS-No.) 75-59-2	0.5 - 1.5	Acute Tox. 2 (Oral), H300 Acute Tox. 1 (Dermal), H310 Skin Corr. 1B, H314 Eye Dam. 1, H318 STOT SE 1, H370 STOT RE 1, H372 Aquatic Chronic 2, H411

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : If exposed or concerned: get medical attention/advice. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use. Never give anything to an unconscious person.

First-aid measures after inhalation : IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention. If breathing is difficult, supply oxygen. If breathing has stopped, give artificial respiration.

First-aid measures after skin contact : IF ON SKIN (or clothing): Remove affected clothing and wash all exposed skin with water for at least 15 minutes. Get medical attention immediately.

First-aid measures after eye contact : IF IN EYES: Immediately flush with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do. Get medical attention immediately. Continue rinsing.

First-aid measures after ingestion : IF SWALLOWED: Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center or medical professional. Get medical attention immediately.

UTENSIL BONDING AGENT B1

Safety Data Sheet

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects	: Causes damage to organs (liver, thymus) through prolonged or repeated exposure (dermal). Causes damage to organs (central nervous system).
Symptoms/effects after skin contact	: Causes skin irritation. Toxic in contact with skin.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: Harmful if swallowed.

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Dry powder. Foam. Water fog. Water spray.

5.2. Specific hazards arising from the chemical

Fire hazard	: Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.
Explosion hazard	: Product is not explosive.
Reactivity	: Reacts with water.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions	: Exercise caution when fighting any chemical fire. Do not dispose of fire-fighting water in the environment. Prevent human exposure to fire, fumes, smoke and products of combustion.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Evacuate area. Keep upwind. Ventilate area. Spill should be handled by trained clean-up crews properly equipped with respiratory equipment and full chemical protective gear (see Section 8).

6.1.1. For non-emergency personnel

Protective equipment	: Wear protective equipment as described in Section 8.
Emergency procedures	: Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Wear suitable protective clothing, gloves and eyes or face protection. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment	: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
Methods for cleaning up	: Soak up spills with inert absorbent solids as soon as possible. Place in a suitable container for disposal in accordance with the waste regulations (See Section 13).

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent accumulation of vapors. Do not breathe vapors. Keep away from sources of ignition - No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools.

7.2. Conditions for safe storage, including any incompatibilities

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Tetramethylammonium hydroxide (75-59-2)		
ACGIH	Remark (ACGIH)	OELs not established
OSHA	Remark (OSHA)	OELs not established

UTENSIL BONDING AGENT B1

Safety Data Sheet

8.2. Appropriate engineering controls

Appropriate engineering controls : Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof equipment with flammable materials. Ensure adequate ventilation, especially in confined areas.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Gloves. Protective goggles. Protective clothing. Lab coat. Chemically resistant apron.

Hand protection:

Use gloves chemically resistant to this material when prolonged or repeated contact could occur. Be aware that the chemical may penetrate the gloves. Frequent changes are advisable. Suggested glove materials are: Neoprene, Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, PVC or vinyl.

Eye protection:

Wear eye protection, including chemical splash goggles and a face shield when possibility exists for eye contact due to spraying liquid or airborne particles.

Skin and body protection:

Wear long sleeves, and chemically impervious PPE/coveralls to minimize bodily exposure.

Respiratory protection:

Use NIOSH-approved dust/particulate respirator. Where vapor, mist, or dust exceed PELs or other applicable OEL's, use NIOSH-approved respiratory protective equipment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Slightly viscous.
Color	: No data available
Odor	: Amine.
Odor threshold	: No data available
Refractive index	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: > 130 °C @ 2mm Hg
Flash point	: -1 °C COC
Auto-ignition temperature	: 340 °C (Hexamethyldisiloxane)
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20 °C	: 0
Relative density	: 0.78 (WATER = 1)
Solubility	: Insoluble, reacts slowly.
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosion limits	: 1.25 - 18.6 vol % (Hexamethyldisiloxane)

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts with water.

UTENSIL BONDING AGENT B1

Safety Data Sheet

10.2. Chemical stability

Stable in sealed containers.

10.3. Possibility of hazardous reactions

Reacts with water and moisture in air, liberating methanol.

10.4. Conditions to avoid

Heat. Sparks. Open flame.

10.5. Incompatible materials

Water.

10.6. Hazardous decomposition products

Organic acid vapors. Methanol.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

UTENSIL BONDING AGENT B1	
ATE US (oral)	500 mg/kg body weight
ATE US (dermal)	500 mg/kg body weight
Tetramethylammonium hydroxide (75-59-2)	
LD50 oral rat	34 - 50 mg/kg
LD50 dermal rat	112 mg/kg
ATE US (oral)	34 mg/kg body weight
ATE US (dermal)	5 mg/kg body weight
Hexamethyldisiloxane (107-46-0)	
LC50 inhalation rat (ppm)	15956 ppm/4h
LDLo oral guinea pig	32500 mg/kg
ATE US (gases)	15956 ppmV/4h

Skin corrosion/irritation : Causes skin irritation.

Serious eye damage/irritation : Causes serious eye irritation.

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity – single exposure : Causes damage to organs (central nervous system).

Specific target organ toxicity – repeated exposure : Causes damage to organs (liver, thymus) through prolonged or repeated exposure (Dermal).

Aspiration hazard : Not classified

Symptoms/effects after skin contact : Causes skin irritation. Toxic in contact with skin.

Symptoms/effects after eye contact : Causes serious eye irritation.

Symptoms/effects after ingestion : Harmful if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No information available.

Hexamethyldisiloxane (107-46-0)	
LC50 fish 1	3.02 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])

12.2. Persistence and degradability

UTENSIL BONDING AGENT B1	
Persistence and degradability	No information available.
Hexamethyldisiloxane (107-46-0)	
Persistence and degradability	May cause long-term adverse effects in the environment.

12.3. Bioaccumulative potential

Hexamethyldisiloxane (107-46-0)	
BCF fish 1	1300
Log Pow	4.2

UTENSIL BONDING AGENT B1

Safety Data Sheet

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the ozone layer : No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Do not allow the product to be released into the environment.

SECTION 14: Transport information

14.1. UN number

UN-No.(DOT) : 1992
DOT NA no. : UN1992

14.2. UN proper shipping name

Transport document description : UN1992 Flammable liquids, toxic, n.o.s. (TETRAMETHYLAMMONIUM SILOXANOLATE in hexamethyldisiloxane), 3 (6.1), II
Proper Shipping Name (DOT) : Flammable liquids, toxic, n.o.s.
(TETRAMETHYLAMMONIUM SILOXANOLATE in hexamethyldisiloxane)
Class (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Packing group (DOT) : II - Medium Danger
Hazard labels (DOT) : 3 - Flammable liquid
6.1 - Poison



DOT Packaging Non Bulk (49 CFR 173.xxx) : 202
DOT Packaging Bulk (49 CFR 173.xxx) : 243
DOT Packaging Exceptions (49 CFR 173.xxx) : 150
DOT Symbols : G - Identifies PSN requiring a technical name

14.3. Additional information

Emergency Response Guide (ERG) Number : 131
Other information : No supplementary information available.

Transport by sea

DOT Vessel Stowage Location : B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.
DOT Vessel Stowage Other : 40 - Stow "clear of living quarters"

Air transport

DOT Quantity Limitations Passenger aircraft/rail : 1 L
(49 CFR 173.27)
DOT Quantity Limitations Cargo aircraft only (49 : 60 L
CFR 175.75)

SECTION 15: Regulatory information

15.1. US Federal regulations

UTENSIL BONDING AGENT B1

SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Reactive hazard
-------------------------------------	--

Tetramethylammonium siloxanolate (68440-88-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

UTENSIL BONDING AGENT B1

Safety Data Sheet

Tetramethylammonium hydroxide (75-59-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Hexamethyldisiloxane (107-46-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

No additional information available

Tetramethylammonium hydroxide (75-59-2)

Listed on the Canadian DSL (Domestic Substances List)

Hexamethyldisiloxane (107-46-0)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

Hexamethyldisiloxane (107-46-0)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

UTENSIL BONDING AGENT B1

All chemical substances in this product are listed in the EPA (Environmental Protection Agency) TSCA (Toxic Substances Control Act) Inventory

Tetramethylammonium hydroxide (75-59-2)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on KECI (Korean Existing Chemicals Inventory)

Hexamethyldisiloxane (107-46-0)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on CICR (Turkish Inventory and Control of Chemicals)

15.3. US State regulations

Tetramethylammonium hydroxide (75-59-2)

U.S. - New Jersey - Right to Know Hazardous Substance List

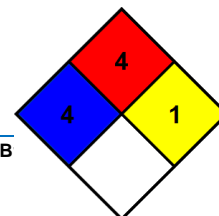
SECTION 16: Other information

Full text of H-phrases::

H225	Highly flammable liquid and vapour
H227	Combustible liquid
H300	Fatal if swallowed
H302	Harmful if swallowed
H310	Fatal in contact with skin
H311	Toxic in contact with skin
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation
H370	Causes damage to organs
H372	Causes damage to organs through prolonged or repeated exposure
H401	Toxic to aquatic life
H411	Toxic to aquatic life with long lasting effects

NFPA health hazard

: 4 - Materials that, under emergency conditions, can be lethal.



UTENSIL BONDING AGENT B1

Safety Data Sheet

NFPA fire hazard	: 4 - Materials that rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and burn readily.
NFPA reactivity	: 1 - Materials that in themselves are normally stable but can become unstable at elevated temperatures and pressures.

Hazard Rating

Health	: 4 Severe Hazard - Life-threatening, major or permanent damage may result from single or repeated overexposures
Flammability	: 4 Severe Hazard - Flammable gases, or very volatile flammable liquids with flash points below 73 F, and boiling points below 100 F. Materials may ignite spontaneously with air. (Class IA)
Physical	: 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.

Author: ANF.

Date of issue: 12/24/2014 Revision date: 07/13/2015 Version: 1.0

SDS US (GHS HazCom 2012) - Custom

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

The information contained in this document has been gathered from reference materials and/or Gelest, Inc. test data and is to the best knowledge and belief of Gelest, Inc. accurate and reliable. Such information is offered solely for your consideration, investigation and verification. It is not suggested or guaranteed that the hazard precautions or procedures described are the only ones which exist. Gelest, Inc. makes no warranties, express or implied, with respect to the use of such information and assumes no responsibility therefore. Information on this safety data sheet is not intended to constitute a basis for product specifications.

© 2018 Gelest Inc. Morrisville, PA 19067

The logo for Gelest features the word "Gelest" in a large, serif font. The "G" is light gray, and the "elest" is white. The text is set against a light purple triangular background that points to the right.

UtenSil® Primer P1

Adhesive/Primer for Reprographic
Grade Silicones

Description

UtenSil® Primer P1 enhances the adhesion of reprographic silicones to a desired substrate.

Solution Properties

Form	clear, colorless
Solids	5-10 wt%
Flashpoint	-4°C
Specific Gravity	0.70
Viscosity	1.0-2.0 cSt

Shelf life

12 months when stored below 25°C in sealed containers. Keep container sealed after dispensing product.

Application Methods

UtenSil® Primer P1 is applied as a coating by spraying, dipping or brushing. The solvent is removed by evaporation in an exhausted area. Moisture induced crosslinking occurs at room temperature over 1-2 hours at 35-85% relative humidity.

Standard Packaging

PP1-USP1 UtenSil® Primer P1
100 g
1 kg

UtenSil® Bonding Agent B1

Bonding Agent for Reprographic
Grade Silicones

Description

UtenSil® Bonding Agent B1 binds reprographic silicone surfaces together irreversibly.

Solution Properties

Form	opaque, white*
Solids	5-10 wt%
Flashpoint	-1°C
Specific Gravity	0.78
Viscosity	2.0-3.0 cSt

*Turns clear after deactivation.

Shelf life

6 months when stored below 25°C in sealed containers. Keep container sealed after dispensing product.

Application Methods

UtenSil® Bonding Agent B1 is applied by spraying, dipping or brushing. The solvent is removed by evaporation in an exhausted area. Bonding of silicone surfaces occurs at 80°C over 4 hours. After bonding is complete the process is deactivated by heating to 140°C for 4 hours in a exhausted area. An amine odor is generated during the deactivation step.

Standard Packaging

PP1-USB1 UtenSil® Bonding Agent B1
100 g
1 kg