

1. Identification

Product identifier

Trade name: 636K14 - Loctite 601

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

General use: Anaerobic adhesive, Screw Locking Agent,
For orthopedic procedures
Reserved for industrial and professional use.

Details of the supplier of the safety data sheet

Company name: Otto Bock Health Care
Street/POB-No.: 3820 W. Great Lakes Drive
Zip code, city: Salt Lake City, UT 84120
USA

WWW: www.ottobockus.com

Telephone: +1 (801) 956-2400

Telefax: +1 (801) 956-2401

Department responsible for information:

Quality Department,
Telephone: +1 (801) 954-2304 (7 AM – 3 PM, Mountain Time),
Email: USRegulatory@ottobock.com

Additional information:

Corporate headquarters:
Ottobock SE & Co. KGaA
Max-Näder-Straße 15
Duderstadt
Germany

Emergency telephone number

CHEMTREC, Telephone: +1 (800) 424-9300

2. Hazard identification

Classification of the substance or mixture

Skin Irritation - Category 2

Eye Irritation - Category 2A

Sensitization - skin - Category 1

Specific Target Organ Toxicity (Repeated Exposure) - Category 2

Causes skin irritation.

Causes serious eye irritation.

May cause an allergic skin reaction.

May cause damage to organs through prolonged or repeated exposure.

Label elements

Symbols:



Signal word:

Warning

Hazard statements:

- Causes skin irritation.
- May cause an allergic skin reaction.
- Causes serious eye irritation.
- May cause damage to organs through prolonged or repeated exposure.

Precautionary statements:

- Do not breathe vapors.
- Wear protective gloves/protective clothing/eye protection.
- Get medical attention if you feel unwell.
- If skin irritation occurs: Get medical advice/attention.
- Wash contaminated clothing before reuse.
- Dispose of contents/container to hazardous or special waste collection point.

Other hazards

Special danger of slipping by leaking/spilling product.

3. Composition/information on ingredients

Mixtures

Chemical characterization: Anaerobic adhesive with polyethylene glycol dimethacrylate base.

Relevant ingredients:

CAS No.	Designation	Concentration	Classification
CAS 109-16-0	2,2'-Ethylenedioxydiethyl dimethacrylate	50 - 100 %	Sensitization - skin - Category 1B.
CAS 868-77-9	2-Hydroxyethyl methacrylate	10 - 20 %	Skin Irritation - Category 2. Eye Irritation - Category 2A. Sensitization - skin - Category 1.
CAS 63393-89-5	Coumarone-Indene Resin	< 10 %	Eye Irritation - Category 2A.
CAS 80-15-9	Cumene hydroperoxide	< 2.5 %	Organic Peroxide - Category E. Acute Toxicity - oral - Category 4. Acute Toxicity - dermal - Category 4. Acute Toxicity - inhalative - Category 3. Skin Corrosion - Category 1B. Specific Target Organ Toxicity (Repeated Exposure) - Category 2. Aquatic toxicity - chronic - Category 2.
CAS 613-48-9	N,N-diethyl-p-toluidine	< 1 %	Acute Toxicity - oral - Category 3. Acute Toxicity - dermal - Category 3. Acute Toxicity - inhalative - Category 3. Specific Target Organ Toxicity (Repeated Exposure) - Category 2. Aquatic toxicity - chronic - Category 3.
CAS 609-72-3	N,N-Dimethyl-o-toluidine	< 1 %	Acute Toxicity - oral - Category 3. Acute Toxicity - dermal - Category 3. Acute Toxicity - inhalative - Category 3. Specific Target Organ Toxicity (Repeated Exposure) - Category 2. Aquatic toxicity - chronic - Category 3.
CAS 79-41-4	Methacrylic acid	< 1 %	Acute Toxicity - oral - Category 4. Acute Toxicity - dermal - Category 3. Acute Toxicity - inhalative - Category 4. Skin Corrosion - Category 1A. Eye Damage - Category 1. Specific Target Organ Toxicity (Single Exposure) - Category 3.

The actual concentration or concentration range is withheld as a trade secret.

4. First aid measures

General information:	Take off contaminated clothing and wash it before reuse. If medical advice is needed, have product container or label at hand.
In case of inhalation:	Move victim to fresh air. Seek medical attention if problems persist.
Following skin contact:	After contact with skin, wash immediately with soap and plenty of water. Seek medical attention if irritation persists.
After eye contact:	Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Consult doctor afterwards.
After swallowing:	Rinse mouth immediately and drink plenty of water. Do not induce vomiting. Consult physician.

Most important symptoms/effects, acute and delayed

Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation.

Information to physician

Treat symptomatically.

5. Fire-fighting measures

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:

Dry chemical powder, foam, Carbon dioxide

Extinguishing media which must not be used for safety reasons:

Full water jet

Specific hazards arising from the chemical

Emits toxic fumes under fire conditions.

In case of fire may be liberated: Nitrogen oxides (NOx), carbon monoxide and carbon dioxide.

Protective equipment and precautions for firefighters

Wear self-contained positive pressure breathing apparatus and full firefighting protective clothing.

Additional information:

Use fine water spray to cool endangered containers.

Do not allow water used to extinguish fire to enter drains, ground or waterways.

Fire residuals and contaminated extinguishing water must be disposed of in accordance with the regulations of the local authorities.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation. Avoid contact with skin and eyes. Do not breathe vapors.

Wear appropriate protective equipment. Take off contaminated clothing and wash it before reuse. Keep unprotected people away.

Environmental precautions:

Do not allow to enter into ground-water, surface water or drains.

Methods and material for containment and cleaning up

Methods for clean-up:

smaller amounts: Collect spilled material using paper towels and dispose.

Large amounts: Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents) and place in closed containers for disposal. Special waste.

Clean contaminated area with soap and water. Provide adequate ventilation.

Additional information:

Special danger of slipping by leaking/spilling product.

7. Handling and storage

Precautions for safe handling

Advices on safe handling: Provide adequate ventilation, and local exhaust as needed. Do not breathe vapors. Avoid contact with skin, eyes, and clothing. Wear appropriate protective equipment. Take off contaminated clothing and wash it before reuse. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Have eye wash bottle or eye rinse ready at work place.

Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:

Keep only in the original container.
Do not return unused portions of product to original container.

Hints on joint storage: Do not store together with Strong oxidizing agents.

8. Exposure controls/personal protection

Control parameters

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
79-41-4	Methacrylic acid	USA: ACGIH: TWA	70 mg/m ³ ; 20 ppm
		USA: NIOSH: TWA	70 mg/m ³ ; 20 ppm
			(may be absorbed through the skin)

Appropriate engineering controls

Provide local exhaust as close as possible to point of adhesion.
To minimize skin contact, Loctite applicators are recommended. Do not breathe vapors.

Personal protection equipment (PPE)

Respiratory protection: Respiratory protection must be worn whenever the TLV (WEL) levels have been exceeded. Use filter type A (= against vapors of organic substances) according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2.

Hand protection: Protective gloves according to OSHA Standard - 29 CFR: 1910.138. Glove material: Nitrile rubber - Layer thickness: >= 0,4 mm. Breakthrough time: >480 min. Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection: Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010.

Body protection: Wear suitable protective clothing.

General hygiene considerations:

Do not breathe vapors. Keep away from food and drinks. Do not eat, drink or smoke when using this product. Avoid contact with skin, eyes, and clothing. Take off contaminated clothing and wash it before reuse. Wash hands before breaks and after work. Follow up by applying skin cream. Have eye wash bottle or eye rinse ready at work place.

Environmental exposure controls

Do not allow to enter into ground-water, surface water or drains.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state at 68 °F and 101.3 kPa	liquid
Color:	green
Odor:	characteristic
Odor threshold:	No data available
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	No data available
Flammability:	No data available
Explosion limits:	No data available
Flash point/flash point range:	> 212 °F
Evaporation rate:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
pH:	no data available
Viscosity:	No data available
Water solubility:	immiscible
Partition coefficient: n-octanol/water:	No data available
Vapor pressure:	No data available
Density:	at 77 °F: 1.098 g/mL
Vapor density:	No data available
Particle characteristics:	Not applicable

Additional information

Additional information:	Possible separation of some components at < -10°C, but no hardening. Boiling point cannot be determined since strong heating will lead to polymerization.
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10. Stability and reactivity

Reactivity:	Refer to subsection "Possibility of hazardous reactions".
Chemical stability:	Stable under recommended storage conditions.
Possibility of hazardous reactions:	Reacts with strong oxidizing agents.
Conditions to avoid:	Keep away from heat.
Incompatible materials:	Strong oxidizing agents.
Hazardous decomposition products:	Carbon monoxide and carbon dioxide.

11. Toxicological information

Information on toxicological effects

Toxicological effects: The statements are derived from the properties of the single components. No toxicological data is available for the product as such.

Acute toxicity (oral): Lack of data.

Acute toxicity (dermal): Lack of data.

Acute toxicity (inhalative): Lack of data.

Skin corrosion/irritation: Skin Irritation - Category 2 = Causes skin irritation.

Serious eye damage/irritation: Eye Irritation - Category 2A = Causes serious eye irritation.

Sensitisation to the respiratory tract: Lack of data.

Skin sensitisation: Sensitization - skin - Category 1 = May cause an allergic skin reaction.

Germ cell mutagenicity/Genotoxicity: Lack of data.

Carcinogenicity: Lack of data.

Reproductive toxicity: Based on available data, the classification criteria are not met.

Information about 2,2'-Ethylenedioxydiethyl dimethacrylate:

Specific symptoms in animal studies, Rat, oral: NOAEL P, F1 \geq 1,000 mg/kg/d (OECD 422, read across)

Information about 2-Hydroxyethyl methacrylate:

Specific symptoms in animal studies, Rat, oral: NOAEL P,F1 \geq 1,000 mg/kg/d (OECD 422, read across)

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure): Lack of data.

Specific target organ toxicity (repeated exposure): Specific Target Organ Toxicity (Repeated Exposure) -

Category 2 = May cause damage to organs through prolonged or repeated exposure.

Information about 2,2'-Ethylenedioxydiethyl dimethacrylate:

Specific symptoms in animal studies, Rat, oral: NOAEL = 1,000 mg/kg/d (OECD 422, read across)

Information about 2-Hydroxyethyl methacrylate:

Specific symptoms in animal studies, Rat, oral: NOAEL = 100 mg/kg/d (OECD 422, read across)

Aspiration hazard: Lack of data.

Other information:

Information about 2,2'-Ethylenedioxydiethyl dimethacrylate

Acute toxicity:

LD50 Rat, oral 10,837 mg/kg

LD50 Mouse, dermal > 2,000 mg/kg

Information about 2-Hydroxyethyl methacrylate

Acute toxicity:

LD50 Rat, oral > 5,000 mg/kg

LD50 Rabbit, dermal > 5,000 mg/kg

Information about Coumarone-Indene Resin

Acute toxicity:

LD50 Rat, oral > 16,000 mg/kg

Information about Cumene hydroperoxide:

Acute toxicity:

LD50 Rat, oral 550 mg/kg

LD50, dermal 1,200 - 1,520 mg/kg

Information about Methacrylic acid:

LD50 Rat, oral > 1,320 mg/kg (OECD 401, read across)

LD50 dermal 500 mg/kg (ATE)

Symptoms

In case of inhalation:

Irritant. cough, shortness of breath, shortage of breath, cramp feeling in breast.

In case of ingestion: Irritant

After contact with skin: skin rash, urticaria

After eye contact: irritation, redness

12. Ecological information

Ecotoxicity

Aquatic toxicity:

Cumene hydroperoxide:

Algae toxicity: *Pseudokirchneriella subcapitata* (green algae): ErC 3.1 mg/L/72h, OECD 201, read across

Daphnia toxicity: *Daphnia magna* (Big water flea) EC50: 18 mg/L/48h, OECD 202, read across

Fish toxicity: *Oncorhynchus mykiss* LC50: 3.9 mg/L/96h, OECD 203, read across

Bacterial toxicity: EC10: 70 mg/L/30min

2-Hydroxyethyl methacrylate

Algae toxicity: *Pseudokirchneriella subcapitata* (green algae): EC50 836 mg/L/72h; NOEC 400 mg/L/72h, OECD 201, read across

Daphnia toxicity: *Daphnia magna* (Big water flea) EC50: 380 mg/L/48h OECD 202, read across; NOEC 24.1 mg/L/21d, OECD 211, read across

Fish toxicity: *Oryzias latipes* LC50: > 100 mg/L/96h, OECD 203, read across

2,2'-Ethylenedioxydiethyl dimethacrylate

Algae toxicity: *Pseudokirchneriella subcapitata* (green algae): EC50 > 100 mg/L/72h; NOEC 18.6 mg/L/72h, OECD 201, read across

Daphnia toxicity: *Daphnia magna* (Big water flea) NOEC: 32 mg/L/21d, OECD 211, read across

Fish toxicity: *Danio rerio* (zebrafish) LC50: 16.4 mg/L/96h, OECD 203, read across

Methacrylic acid

Algae toxicity: *Pseudokirchneriella subcapitata* (green algae): EC50 > 45 mg/L/72h; NOEC 8.2 mg/L/72h, OECD 201, read across

Daphnia toxicity: *Daphnia magna* (Big water flea) EC50: > 130 mg/L/48h, EPA OTS 797.1300, read across

Fish toxicity: *Oncorhynchus mykiss* LC50: 85 mg/L/96h, EPA OTS 797.1400, read across

Bacterial toxicity: EC10: 100 mg/L/17h

Persistence and degradability

Further details:

2-Hydroxyethyl methacrylate: easily bio-degradable, Degradation aerobic: 92 - 100 %, OECD 301 C, read across

Cumene hydroperoxide: Degradation: 0 %, OECD 301 B, read across

2,2'-Ethylenedioxydiethyl dimethacrylate: easily bio-degradable, Degradation aerobic: 85 % OECD 301 B, read across

Methacrylic acid: easily bio-degradable, Degradation aerobic: 100 % OECD 302 B, read across

Bioaccumulative potential

Cumene hydroperoxide: Distribution coefficient: 2.16

Methacrylic acid: Distribution coefficient (71.6 °F): 0.93 OECD 107, read across

2-Hydroxyethyl methacrylate: Distribution coefficient (77 °F): 0.42 OECD 107, read across

2,2'-Ethylenedioxydiethyl dimethacrylate: Distribution coefficient: 2.3 OECD 117, read across

Bioconcentration factor (BCF):

Cumene hydroperoxide: Bioconcentration factor (BCF): 9,1, OECD 305, read across

Mobility in soil

No data available

Other adverse effects

General information: Do not allow to enter into ground-water, surface water or drains.

13. Disposal considerations

Waste treatment methods

Product

Recommendation: Special waste. Dispose of waste according to applicable legislation.

Package

Recommendation: Dispose of waste according to applicable legislation.
Handle contaminated packages in the same way as the substance itself.
Non-contaminated packages may be recycled.

14. Transport information

UN number

DOT, IMDG, IATA-DGR: not applicable

UN proper shipping name

DOT, IMDG, IATA-DGR: Not restricted

Transport hazard class(es)

DOT, IMDG, IATA-DGR: not applicable

Packing group

DOT, IMDG, IATA-DGR: not applicable

Environmental hazards

Marine pollutant: no

Transport in bulk according to IMO instruments

No data available

Special precautions for user

USA: Department of Transportation (DOT)

Proper shipping name: Not restricted

Sea transport (IMDG)

Proper shipping name: Not restricted

Marine pollutant: no

Air transport (IATA)

Proper shipping name: Not restricted

Further information

No dangerous good in sense of these transport regulations.

15. Regulatory information

National regulations - U.S. Federal Regulations

2,2'-Ethylenedioxydiethyl dimethacrylate: TSCA Inventory: listed
 2-Hydroxyethyl methacrylate: TSCA Inventory: listed
 Coumarone-Indene Resin: TSCA Inventory: listed; UVCB
 Cumene hydroperoxide: TSCA Inventory: listed
 Clean Air Act:
 CAA SOCM Chemical: yes
 Other Environmental Laws:
 CERCLA: RQ 10 lbs.
 SARA Title III, Section 313, Toxic Release: NPFAS; De Minimis
 <=1.0 %; Thresholds 25000/10000 lbs
 OSHA Process Safety Management: Threshold 5000 lbs.
 N,N-diethyl-p-toluidine: TSCA Inventory: listed
 N,N-Dimethyl-o-toluidine: TSCA Inventory: listed
 Methacrylic acid: TSCA Inventory: listed
 Clean Air Act:
 CAA SOCM Chemical: yes
 NIOSH Recommendations:
 Occupational Health Guideline: 0386*

National regulations - U.S. State Regulations

Cumene hydroperoxide: New York Right-To-Know: listed

Further regulations, limitations and legal requirements

No data available

16. Other information

Text for labeling: Contains 50 - 100 % 2,2'-Ethylenedioxydiethyl dimethacrylate, 10 - 20 % 2-Hydroxyethyl methacrylate, < 10 % Coumarone-Indene Resin, < 2.5 % Cumene hydroperoxide, < 1 % N,N-diethyl-p-toluidine, < 1 % N,N-Dimethyl-o-toluidine, < 1 % Methacrylic acid.
 Contains 2,2'-Ethylenedioxydiethyl dimethacrylate, cumene hydroperoxide and 2-Hydroxyethyl methacrylate

Revision date: 11/28/2025

Date of first version: 6/23/2017

Reason of change: General revision: Safety Data Sheet according to HCS 2024 (29 CFR 1910.1200)

Hazard rating systems: NFPA Hazard Rating:

Health: 2 (Moderate)
 Fire: 1 (Slight)
 Reactivity: 0 (Minimal)

HMIS Version III Rating:

Health: 2 (Moderate) - Chronic effects
 Flammability: 1 (Slight)
 Physical Hazard: 0 (Minimal)
 Personal Protection: X = Consult your supervisor



HEALTH	*	2
FLAMMABILITY		1
PHYSICAL HAZARD		0
X		

Abbreviations and acronyms:

Acute Toxicity: Acute toxicity
 Aquatic toxicity - chronic: Hazardous to the aquatic environment - chronic
 AS/NZS: Australian Standards/New Zealand Standards
 BCF: Bioconcentration Factor
 CAS: Chemical Abstracts Service
 CFR: Code of Federal Regulations
 CLP: Classification, Labelling and Packaging
 DMEL: Derived minimal effect level
 DNEL: Derived no-effect level
 DOT: Department of Transportation's Safety Regulations (USA)
 EC: European Community
 EC50: Effective Concentration 50%
 EmS: Emergency Response Procedures for Ships Carrying Dangerous Goods
 EN: European Standard
 EQ: Excepted quantities
 Eye Damage: Eye damage
 Eye Irritation: Eye irritation
 IATA: International Air Transport Association
 IATA-DGR: International Air Transport Association – Dangerous Goods Regulations
 IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
 IMDG Code: International Maritime Dangerous Goods Code
 IMO: International Maritime Organization
 LC50: Median lethal concentration
 LD50: Lethal dose 50%
 MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
 NOEC: No Observed Effect Concentration
 OECD: Organisation for Economic Co-operation and Development
 OEL: Occupational Exposure Limit Value
 Organic Peroxide: Organic peroxide
 OSHA: Occupational Safety and Health Administration
 PBT: Persistent, bioaccumulative and toxic
 PNEC: Predicted no-effect concentration
 Sensitization - skin: Skin sensitisation
 Skin Corrosion: Skin corrosion
 Skin Irritation: Skin irritation
 STOT RE: Specific target organ toxicity - repeated exposure
 STOT SE: Specific target organ toxicity - single exposure
 TLV: Threshold Limit Value
 TRGS: Technical Rules for Hazardous Substances
 vPvB: Very persistent and very bioaccumulative
 WEL: Workplace Exposure Limit

Department issuing data sheet

Contact person: see section 1: Department responsible for information

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.