

1. Product and company identification

Product identifier

Trade name: 636W60 - Loctite 243

Recommended use and restrictions on use

General use: Anaerobe sealing agent, Screw Locking Agent, for orthopedic procedures
Reserved for industrial and professional use.

Initial supplier identifier

Company name: Otto Bock HealthCare Canada Ltd.

Street/POB-No.: 5470 Harvester Road

Postal Code, city: Burlington, ON L7L 5N5, CA
Canada

WWW: www.ottobock.ca

E-mail: info.canada@ottobock.com

Telephone: (800) 665-3327

Telefax: (800) 463-3659

Department responsible for information:

Mark Agro, Telephone: (800) 665-3327 (9 am - 5 pm)

Additional information:

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

Emergency phone number

COLLECT, Telephone: (613) 996-6666

Transport:

CONSULTANK Lutz Harder GmbH (Contract QUALI003)

Telephone: +49 (0)178-4337434 (from USA: 01149 178 4337434)

2. Hazards identification

Emergency overview

Appearance: Physical state at 20 °C and 101.3 kPa: liquid

Color: blue

Odor: Mild (acryl)

Classification: Sensitization - skin 1. Aquatic toxicity - acute 2. Aquatic toxicity - chronic 3.

Hazard symbols:



Signal word:

Warning

Hazard statements:

May cause an allergic skin reaction.
Toxic to aquatic life.
Harmful to aquatic life with long lasting effects.

Precautionary statements:

Avoid breathing mist/vapors/spray.
 Avoid release to the environment.
 Wear protective gloves/protective clothing/eye protection.
 If skin irritation or rash occurs: Get medical advice/attention.
 Take off contaminated clothing and wash it before reuse.
 Dispose of contents/container to hazardous or special waste collection point.

Regulatory status

This material is considered hazardous by the WHMIS in Canada.

Hazards not otherwise classified

Special danger of slipping by leaking/spilling product.
 see section 11: Toxicological information

3. Composition / Information on ingredients

Chemical characterisation: Anaerobe sealing agent

Relevant ingredients:

CAS No.	Designation	Concentration	Classification
CAS 2082-81-7	Tetramethylene dimethacrylate	20 - 40 %	Sensitization - skin 1. Aquatic toxicity - acute 2.
CAS 101-37-1	2,4,6-Triallyloxy-s-triazine	5 - 10 %	Acute Toxicity 4 (oral). Aquatic toxicity - acute 2. Aquatic toxicity - chronic 2.
CAS 109-16-0	2,2'-Ethylenedioxydiethyl dimethacrylate	1 - 5 %	Sensitization - skin 1. Aquatic toxicity - acute 3.
CAS 51978-15-5	[2-[(2-Methyl-1-oxoallyl)oxy]ethyl] hydrogen maleate	< 1 %	Skin Corrosion 1B. Eye Damage 1. Sensitization - skin 1.
CAS 79-41-4	Methacrylic acid	< 1 %	Flammable Liquid 4. Acute Toxicity 4 (oral). Acute Toxicity 3 (dermal). Acute Toxicity 4 (inhalative). Skin Corrosion 1A. Eye Damage 1. Specific Target Organ Toxicity (Single Exposure) 3. Aquatic toxicity - acute 3.
CAS 108-31-6	Maleic anhydride	0.001 - 0.01 %	Acute Toxicity 4 (oral). Skin Corrosion 1B. Eye Damage 1. Respiratory Sensitizer 1. Sensitization - skin 1. Specific Target Organ Toxicity (Repeated Exposure) 1. Aquatic toxicity - acute 3.

Additional information: Contains silicon dioxide, polyethylene.
 The maximum workplace exposure limits are, where necessary, listed in section 8.

4. First aid measures

General information: If medical advice is needed, have product container or label at hand.

In case of inhalation: Move victim to fresh air. If you feel unwell, seek medical advice.

Following skin contact: Remove residues with soap and water. Take off contaminated clothing and wash it before reuse. In case of skin reactions, consult a physician.

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. In case of eye irritation consult an ophthalmologist.

After swallowing: Rinse mouth immediately and drink plenty of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Consult physician.

Most important symptoms and effects, both acute and delayed

May cause an allergic skin reaction.

Information to physician

Treat symptomatically.

5. Fire fighting measures

Flash point/flash point range:

> 100 °C

Auto-ignition temperature: No data available

Suitable extinguishing media:

Water spray jet, extinguishing 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 (NO_x), carbon monoxide and carbon dioxide.

Special protective equipment and precautions for fire-fighters:

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

Additional information:

Do not breathe fumes. Do not allow fire water to penetrate into surface or ground water. Contaminated fire-fighting water must be collected separately.

6. Accidental release measures

Personal precautions:

Avoid breathing mist/vapors/spray. Avoid contact with skin and eyes. If possible, eliminate leakage.

Provide adequate ventilation. 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. If necessary, notify appropriate authorities.

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.

Never return spills in original containers for re-use.

Additional information:

Special danger of slipping by leaking/spilling product.

7. Handling and storage

Handling

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

Precautions against fire and explosion:

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Storage

Requirements for storerooms and containers:

Keep container tightly closed and in a well-ventilated place. Keep container dry. Keep only in the original container.

Protect from heat and direct sunlight. Store containers in upright position.

Hints on joint storage:

Keep away from food, drink and animal feedingstuffs.

Do not store together with: Acids, reducing agents, strong bases, strong oxidizing agents.

8. Exposure controls / personal protection

Exposure guidelines

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
79-41-4	Methacrylic acid	Canada: OEL 8 hour	70 mg/m ³ ; 20 ppm
		Canada: OEL TWA	20 ppm
		Canada: VEMP	70 mg/m ³ ; 20 ppm
108-31-6	Maleic anhydride	Canada: OEL 8 hour	0.4 mg/m ³ ; 0.1 ppm
		Canada: OEL TWA	0.1 ppm
		Canada: VEMP	0.01 mg/m ³

Engineering controls

Provide for good ventilation or exhaust system or work with completely self-contained equipment.

See also information in chapter 7, section storage.

Personal protection equipment (PPE)

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

Skin protection: Wear suitable protective clothing.

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.

Respiratory protection: Respiratory protection must be worn whenever the TLV (WEL) levels have been exceeded. In case of inadequate ventilation wear respiratory protection.
Recommendation: Use filter type A (= against vapors of organic substances) according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2.
The filter class must be suitable for the maximum contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product.

General hygiene considerations:
Avoid breathing mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling. Take off contaminated clothing and wash it before reuse. Have eye wash bottle or eye rinse ready at work place.

Environmental exposure controls

Refer to 6.: Section "Environmental precautions".

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance:	Physical state at 20 °C and 101.3 kPa: liquid Color: blue
Odor:	Mild (acryl)
Odor threshold:	No data available
pH:	No data available
Melting point/freezing point:	< -30 °C
Initial boiling point and boiling range:	> 150 °C
Flash point/flash point range:	> 100 °C
Evaporation rate:	No data available
Flammability:	This material is combustible, but will not ignite readily.
Explosion limits:	LEL (Lower Explosion Limit): Not determined UEL (Upper Explosive Limit): Not determined
Vapor pressure:	at 27 °C: < 1.33 hPa
Vapor density:	1 (Air = 1)
Density:	1.08 g/mL
Water solubility:	Not miscible in any proportion
Partition coefficient: n-octanol/water:	3.1 log P(o/w) (Tetramethylene dimethacrylate) Based on the n-octanol/water partition coefficient significant accumulation in organisms is not expected. at 20 °C: 2.8 log P(o/w) (2,4,6-Triallyloxy-s-triazine) Based on the n-octanol/water partition coefficient significant accumulation in organisms is not expected.
Auto-ignition temperature:	No data available
Thermal decomposition:	No data available
Viscosity, dynamic:	1,300 - 3,000 mPa*s (Brookfield)
Viscosity, kinematic:	at 40 °C: > 20.5 mm²/s
Ignition temperature:	Not determined

10. Stability and reactivity

Reactivity:	Refer to subsection "Possibility of hazardous reactions".
Chemical stability:	Product is stable under normal storage conditions.
Possibility of hazardous reactions:	Exothermic polymerization may occur.
Conditions to avoid:	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Incompatible materials:	Acids, reducing agent, strong bases, strong oxidizing agents
Hazardous decomposition products:	No hazardous decomposition products when regulations for storage and handling are observed.
Thermal decomposition:	No data available

11. Toxicological information

Toxicological tests

Toxicological effects:	<p>The statements are derived from the properties of the single components. No toxicological data is available for the product as such.</p> <p>Acute toxicity (oral): Lack of data.</p> <p>Acute toxicity (dermal): Lack of data.</p> <p>Acute toxicity (inhalative): Lack of data.</p> <p>Skin corrosion/irritation: Based on available data, the classification criteria are not met.</p> <p>Serious eye damage/irritation: Based on available data, the classification criteria are not met.</p> <p>Sensitisation to the respiratory tract: Based on available data, the classification criteria are not met.</p> <p>Skin sensitisation: Sensitization - skin 1 = May cause an allergic skin reaction.</p> <p>Germ cell mutagenicity/Genotoxicity: Lack of data.</p> <p>Carcinogenicity: Lack of data.</p> <p>Reproductive toxicity: Lack of data.</p> <p>Effects on or via lactation: Lack of data.</p> <p>Specific target organ toxicity (single exposure): Lack of data.</p> <p>Specific target organ toxicity (repeated exposure): Based on available data, the classification criteria are not met.</p> <p>Aspiration hazard: Based on available data, the classification criteria are not met.</p>
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Other information: Information about Tetramethylene dimethacrylate (CAS 2082-81-7):
 LD50 Rat, oral: 10,660 mg/kg (OECD 401)
 LD50 Rat, dermal: > 2,000 mg/kg (OECD 402)
 Information about 2,4,6-Triallyloxy-s-triazine (CAS 101-37-1):
 LD50 Rat, oral: 753mg/kg (OECD 401)
 LD50 Rabbit, dermal: > 2,000 mg/kg (OECD 402), no mortality occurred
 Information about Methacrylic acid (CAS 79-41-4):
 LD50 Rat, oral: 1,320 mg/kg (OECD 401)
 LD50 Rabbit, dermal: ≥ 500 mg/kg
 LC50 Rat, inhalative (dust/mist): 3.19 mg/L/4h (OECD 403)

Symptoms

After contact with skin: Skin rash, urticaria

12. Ecological information

Ecotoxicity

Aquatic toxicity: Toxic to aquatic life with long lasting effects.
 Information about Tetramethylene dimethacrylate (CAS 2082-81-7):
 Fish toxicity:
 LC50 Danio rerio (zebrafish): 3.34 mg/L/96h (OECD 203)
 Daphnia toxicity:
 EC50 Daphnia magna (Big water flea): 28.4 mg/L/48h (data obtained by analogy conclusion, e.g. (Q)SAR)
 NOEC Daphnia magna (Big water flea): 5.09 mg/L/21d (OECD 211)
 Algae toxicity:
 ErC50 Desmodesmus subspicatus (green algae): 9.79 mg/L/72h (OECD 201)
 NOEC Desmodesmus subspicatus (green algae): 2.11 mg/L/72h (OECD 201)
 Information about 2,4,6-Triallyloxy-s-triazine (CAS 101-37-1):
 Fish toxicity:
 LC50 Danio rerio (zebrafish): 7.05 mg/L/96h (OECD 203)
 Daphnia toxicity:
 EC50 Daphnia magna (Big water flea): 40 mg/L/48h (OECD 202)
 Algae toxicity:
 ErC50 Desmodesmus subspicatus (green algae): 10.52 mg/L/72h (OECD 201)
 NOEC Desmodesmus subspicatus (green algae): 2.5 mg/L/72h (OECD 201)
 Effects in sewage plants: Information about 2,4,6-Triallyloxy-s-triazine (CAS 101-37-1):
 EC50 activated sludge: > 1,000 mg/L/3h

Mobility in soil

Information about 2,4,6-Triallyloxy-s-triazine (CAS 101-37-1):
 log KOC: 2.6

Persistence and degradability

Further details: Biodegradability:
 Information about Tetramethylene dimethacrylate (CAS 2082-81-7):
 Formation of carbon dioxide: 84%/28d (OECD 310), easily bio-degradable
 Information about 2,4,6-Triallyloxy-s-triazine (CAS 101-37-1):
 Formation of carbon dioxide: 9%/28d (OECD 301 B), not easily bio-degradable

Additional ecological information

Volatile organic compounds (VOC):

< 3 % by weight

General information:

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

13. Disposal considerations

Product

Recommendation:

Dispose of waste according to applicable legislation. Do not allow to enter drains.

Package

Recommendation:

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

14. Transport information

UN number

ADR/RID, IMDG, IATA-DGR:

not applicable

UN proper shipping name

ADR/RID, IMDG, IATA-DGR:

Not restricted

Transport hazard class(es)

ADR/RID, IMDG, IATA-DGR:

not applicable

Packing group

ADR/RID, IMDG, IATA-DGR:

not applicable

Environmental hazards

Marine pollutant:

no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No data available

Canada: Transportation of Dangerous Goods (TDG)

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 - Canada

Tetramethylene dimethacrylate:	DSL: listed
2,4,6-Triallyloxy-s-triazine:	DSL: listed
2,2'-Ethylenedioxydiethyl dimethacrylate:	DSL: listed
[2-[(2-Methyl-1-oxoallyl)oxy]ethyl] hydrogen maleate:	NDSL: listed
Methacrylic acid:	DSL: listed
Maleic anhydride:	DSL: listed
Polyethylene:	DSL: listed
Silicon dioxide:	DSL: listed

16. Other information

Text for labeling:

Contains 20 - 40 % Tetramethylene dimethacrylate, 5 - 10 % 2,4,6-Triallyloxy-s-triazine, 1 - 5 % 2,2'-Ethylenedioxydiethyl dimethacrylate, < 1 % [2-[(2-Methyl-1-oxoallyl)oxy]ethyl] hydrogen maleate, < 1 % Methacrylic acid, 0.001 - 0.01 % Maleic anhydride.

Hazard rating systems:



NFPA Hazard Rating:

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

HMIS Version III Rating:

Health: 1 (Slight)
Flammability: 1 (Slight)
Physical Hazard: 0 (Minimal)
Personal Protection: X = Consult your supervisor

HEALTH	1
FLAMMABILITY	1
PHYSICAL HAZARD	0
	X

Classification procedure:

Physical hazards: on basis of test data
Health hazards, environmental hazards: calculation method

Abbreviations and acronyms:

Acute Toxicity: Acute toxicity
 ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
 ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
 Aquatic toxicity - acute: Hazardous to the aquatic environment - acute
 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
 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
 Flammable Liquid: Flammable liquid
 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%
 LEL: Lower Explosion Limit
 log P(o/w): Partition coefficient: octanol/water
 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
 OSHA: Occupational Safety and Health Administration
 PBT: Persistent, bioaccumulative and toxic
 PNEC: Predicted no-effect concentration
 QSAR: Quantitative Structure-Activity Relationship
 Respiratory Sensitizer: Sensitisation to the respiratory tract
 RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail
 Sensitization - skin: Skin sensitisation
 Skin Corrosion: Skin corrosion
 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
 WHMIS: Workplace Hazardous Materials Information System

Reason of change: Changes in section 2: Classification, labelling
 Changes in section 3: Composition/information on ingredients
 Changes in section 9: Physical and chemical properties
 Changes in section 14: Transport information
 General revision

Date of first version: 24/2/2005

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.