

1. Product and company identification

Product identifier

Trade name: 636W17 - Plastic Adhesive

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

General use: Synthetic adhesive 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
Postal Code, city: Salt Lake City, UT 84120
USA

WWW: www.ottobockus.com

Telephone: +1 (801) 956-2400

Telefax: +1 (801) 956-2401

Dept. 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 phone number

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

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 68 °F and 101.3 kPa: liquid

Color: colorless

Odor: characteristic

Classification: Flammable Liquid - Category 2; Eye Irritation - Category 2A;
Specific Target Organ Toxicity (Single Exposure) - Category 3;

Hazard symbols:



Signal word: **Danger**

Hazard statements: Highly flammable liquid and vapor.
Causes serious eye irritation.
May cause drowsiness or dizziness.

Precautionary statements:

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Take precautionary measures against static discharge.
Avoid breathing vapors.
Wear protective gloves/protective clothing/eye protection.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Call a POISON CENTER/doctor if you feel unwell.
Store locked up.

Regulatory status

This material is considered hazardous by the U.S. OSHA Hazard Communication Standard (29 CFR 1910.1200) and SIMDUT in Canada.

Hazards not otherwise classified

Higher doses may lead to a narcotic effect.
Potentially explosive mixtures may form if adequate ventilation is not provided.
Inhaling can lead to irritations of the respiratory tract and mucous membrane.
see section 11: Toxicological information

3. Composition / Information on ingredients

Chemical characterization: Adhesive on the basis of Solution of polyurethane.

Relevant ingredients:

CAS No.	Designation	Content	Classification
CAS 67-64-1	Acetone	>= 50 %	Flammable Liquid - Category 2. Eye Irritation - Category 2A. Specific Target Organ Toxicity (Single Exposure) - Category 3.
CAS 141-78-6	Ethyl acetate	25 - 50 %	Flammable Liquid - Category 2. Eye Irritation - Category 2A. Specific Target Organ Toxicity (Single Exposure) - Category 3.

4. First aid measures

In case of inhalation: Provide fresh air. Seek medical treatment in case of troubles.
Monitor breathing. In case of irregular breathing or respiratory arrest provide artificial respiration. Seek medical attention.

Following skin contact: After contact with skin, wash immediately with soap and plenty of water.
Immediately remove any wetted clothing, shoes or stockings. Follow up by applying skin cream. 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. Subsequently seek the immediate attention of an ophthalmologist.

After swallowing: Do NOT induce vomiting. Immediately get medical attention.

Most important symptoms/effects, acute and delayed

Causes serious eye irritation. May cause drowsiness or dizziness. Repeated exposure may cause skin dryness or cracking.

Information to physician

Combat acidosis. Monitor alkali reserves.
Treat symptomatically.

5. Fire fighting measures

Flash point/flash point range:

-2.2 °F

Auto-ignition temperature: not self-igniting

Suitable extinguishing media:

Water spray jet, foam, dry chemical powder, carbon dioxide

Extinguishing media which must not be used for safety reasons:

Full water jet

Specific hazards arising from the chemical

Highly flammable liquid and vapor. Vapors form potentially explosive mixtures with air, which are heavier than air. Air-Vapor mixture may travel great distances at floor level and lead to backflash when exposed to an ignition source.

On heating or in case of fire toxic gases may form.

In case of fire: NO_x and decomposition products containing HCN may develop. 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:

Heating will lead to pressure increase: Danger of bursting and explosion. Cool exposed containers with water spray.

You have to dispose of contaminated extinguishing water according to the regulations of the authorities.

Do not inhale explosion and combustion gases.

6. Accidental release measures

Personal precautions:

Eliminate all ignition sources if safe to do so.

Do not breathe vapors. Provide adequate ventilation.

If necessary: Use appropriate respiratory protection.

Avoid contact with skin and eyes. Keep unprotected people away.

Wear protective equipment. Take off contaminated clothing and wash it before reuse.

Environmental precautions:

Do not allow to enter drains, basements or pits.

Do not allow to penetrate into soil, waterbodies or drains.

Methods for clean-up: Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents) and place in closed containers for disposal.
Plug leak if safely possible.

In case of greater quantities: Collect mechanically (use only explosion-proof equipment when pumping out). Dam spills. Seal all low level rooms.

Flowing water:
Dilution occurs quickly. In case of large spills/leaks inform appropriate local, state, and federal spill reporting authorities.

Standing water:
Seal off. Remove all sources of ignition.

Additional information: Use only explosion-protected equipment/instruments.
Vapors spread at floor level. Cover drainage holes and evacuate basement.
Beware of reignition.

Liquid evaporates very quickly.
Mixtures with 4% acetone mixed with 96% water still have a flash point of 129.2 °F. In case of important spills, risk of ignition of the acetone-water mixture. Potentially explosive mixtures with air may form above water surface.

7. Handling and storage

Handling

Advices on safe handling: Provide adequate ventilation, and local exhaust as needed.
Do not breathe vapors. Avoid contact with skin and eyes.
Wear protective equipment. Take off contaminated clothing and wash it before reuse.
Use local exhaust in the field of the processing equipment.
Have eye wash bottle or eye rinse ready at work place.

Precautions against fire and explosion:
Vapors may form explosive mixtures with air.
Exposure to temperatures exceeding 122 °F will increase pressure: resulting in danger of bursting or explosion.
Keep away from sources of ignition - No smoking.
Take precautionary measures against static discharges.
Use only explosion-protected equipment/instruments.

Storage

Requirements for storerooms and containers:
Keep container dry. Keep container tightly closed in a cool, well-ventilated place.
Protect against heat /sun rays. Protect from light.
Steel, stainless steel, and aluminium are stable container materials. Copper may be attacked.
In partially filled containers explosive mixtures may form.

Hints on joint storage: Keep away from food, drink and animal feedingstuffs.

8. Exposure controls / personal protection

Exposure guidelines

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
67-64-1	Acetone	USA: ACGIH: STEL	500 ppm
		USA: ACGIH: TWA	250 ppm
		USA: NIOSH: TWA	590 mg/m ³ ; 250 ppm
		USA: OSHA: TWA	2400 mg/m ³ ; 1000 ppm
141-78-6	Ethyl acetate	USA: ACGIH: TWA	1440 mg/m ³ ; 400 ppm
		USA: NIOSH: TWA	1400 mg/m ³ ; 400 ppm
		USA: OSHA: TWA	1400 mg/m ³ ; 400 ppm

Biological limit values:

CAS No.	Designation	Type	Limit value	Parameter	Sampling
67-64-1	Acetone	USA: ACGIH-BEI, urine	25 mg/L	acetone	end of exposure or end of shift

Engineering controls

Explosion protection required. Work only with resistant materials.

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

Use local exhaust in the field of the processing 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.
In case of handling larger quantities: flame-retardant protective clothing, solvent-resistant protective clothing
protective gloves according to OSHA Standard - 29 CFR: 1910.138.
Glove material: Butyl caoutchouc (butyl rubber)-Layer thickness >= 0,5 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. The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used. Have a breathing apparatus that is not dependent on the circulating air ready for emergencies.
In case of prolonged or repeated exposures: use self-contained breathing apparatus.

General hygiene considerations:

Do not breathe vapors. Avoid contact with skin and eyes.

Take off contaminated clothing and wash it before reuse. Wash hands before breaks and after work.

Keep away from sources of ignition - No smoking.

Have eye wash bottle or eye rinse ready at work place.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance:	Physical state at 68 °F and 101.3 kPa: liquid Color: colorless
Odor:	characteristic
Odor threshold:	not determined
pH value:	not determined
Melting point/freezing point:	not determined
Initial boiling point and boiling range:	132.8 °F
Flash point/flash point range:	-2.2 °F
Evaporation rate:	No data available
Flammability:	No data available
Explosion limits:	LEL (Lower Explosion Limit): 2.10 Vol-% UEL (Upper Explosive Limit): 13.00 Vol-%
Vapor pressure:	at 68 °F: 247 hPa at 122 °F: (Acetone) 800 hPa
Vapor density:	No data available
Density:	at 68 °F: 0.88 g/mL
Solubility:	at 68 °F: various organic solvents
Water solubility:	slightly miscible
Partition coefficient: n-octanol/water:	No data available
Auto-ignition temperature:	not self-igniting
Thermal decomposition:	No data available
Viscosity, dynamic:	at 68 °F: 3600 mPa*s (DIN53019Brookfld.RVT)
Explosive properties:	Product is not explosive. Vapors may form explosive mixtures with air.
Solvent content:	78.9 %
Solid content:	21.1 %

10. Stability and reactivity

Reactivity:	Highly flammable liquid and vapor. Vapors may form explosive mixtures with air.
Chemical stability:	Stable under recommended storage conditions.
Possibility of hazardous reactions	Heating will lead to pressure increase: Danger of bursting and explosion.
Conditions to avoid:	Keep away from heat sources, sparks and open flames.
Incompatible materials:	Attacks many plastics and rubbers. On contact with barium hydroxide, sodium hydroxide and many other alkaline materials condensation may occur.
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: The statements are derived from the properties of the single components. No toxicological data is available for the product as such.

Acute toxicity (oral): Based on available data, the classification criteria are not met.
ATEmix calculated: > 2,000 mg/kg

Acute toxicity (dermal): Based on available data, the classification criteria are not met.
ATEmix calculated: > 2,000 mg/kg

Acute toxicity (inhalative): Based on available data, the classification criteria are not met.
ATEmix calculated: > 20 mg/L

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

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

Sensitisation to the respiratory tract: Based on available data, the classification criteria are not met.

Skin sensitisation: Based on available data, the classification criteria are not met.

Germ cell mutagenicity/Genotoxicity: Based on available data, the classification criteria are not met.

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

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

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure): Specific Target Organ Toxicity (Single Exposure) - Category 3 = May cause drowsiness or dizziness.

Specific target organ toxicity (repeated exposure): Based on available data, the classification criteria are not met.

Aspiration hazard: Based on available data, the classification criteria are not met.

Other information: Information about acetone:
LD50 Rat, oral: 5,370 - 6,980 mg/kg
LD50 Rabbit, dermal: > 5,000 mg/kg
LC50 Rat, inhalative (vapor): > 30 mg/L/4

Information about ethyl acetate
LD50 Rat, oral: > 2,000 mg/kg
LD50 Rabbit, dermal: > 5,000 mg/kg
LC 0 Rat, inhalative (vapor): > 22.5 mg/L/6h

Symptoms

Burning eyes and skin.

In case of inhalation:

fatigue, nausea, Headache, dizziness, drowsiness, vomiting, breathing paralysis, unconsciousness.

In case of ingestion:

The absorption of even very small amounts of this product through the stomach may lead to health problems.

symptoms: Drowsiness, vomiting. Gastric and intestinal problems.

After contact with skin:

Repeated exposure may cause skin dryness or cracking, due to defatting properties.

After eye contact: Corneal damage

12. Ecological information

Ecotoxicity

Aquatic toxicity:

Information about Acetone:

Acute effects:

Fish toxicity:

- freshwater species: 96h LC50 (Oncorhynchus mykiss): 5540 mg/L
- marine species: 96h LC50 (Alburnus alburnus (alburnus)): 11000 mg/L

Invertebrate toxicity:

- freshwater species: 48h EC50 (Daphnia pulex (water flea)): 8800 mg/L
- marine species: 24h EC50 (Artemisia salina): 2100 mg/l

Algae toxicity:

- freshwater species: 8h NOEC (Microcystis aeruginosa): 530 mg/L/8 d.
- marine species: 96h NOEC (Prorocentrum minimum): 430 mg/L

Bacterial toxicity:

EC 12: (30 min; activated sludge; OECD 209): 1000 mg/L

Long-term effects:

Long-term toxicity to aquatic invertebrates:

28-days NOEC (Daphnia pulex (water flea); reproduction: 2212 mg/L

No information on long-term effects of fish and algae available.

Long-term effects on aquatic organisms are not relevant due to the rapid elimination in water.

Mobility in soil

No data available

Persistence and degradability

Further details:

No data available

Additional ecological information

Volatile organic compounds (VOC):

78.93 % by weight = 694.6 g/L

General information:

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

13. Disposal considerations

Product

Recommendation:

Incinerate as hazardous waste according to applicable local, state, and federal regulations.
Do not dispose of with household waste.
Do not empty into drains.

Contaminated packaging

Recommendation:

Dispose of waste according to applicable legislation.
Non-contaminated packages may be recycled.
Cans not thoroughly emptied are to be sent to the problem waste disposal.

Additional information

Handle empty containers with care. Incineration may cause explosion.

14. Transport information

USA: Department of Transportation (DOT)

Identification number: UN1133
 Proper shipping name: UN 1133, UN 1133, adhesives
 Hazard class or Division: 3
 Packing Group: III
 Labels: 3
 Special provisions: B1, B52, IB3, T2, TP1
 Packaging – Exceptions: 150
 Packaging – Non-bulk: 173
 Packaging – Bulk: 242
 Quantity limitations – Passenger aircraft / rail: 60 L
 Quantity limitations – Cargo only: 220 L
 Vessel stowage – Location: A
 Vessel stowage – Other:



Sea transport (IMDG)

UN number: UN 1133
 Proper shipping name: UN 1133, Adhesives
 Class or division, Subsidiary risk: Class 3, Subrisk -
 Packing Group: III
 EmS: F-E, S-D
 Special provisions: 223, 955
 Limited quantities: 5 L
 Excepted quantities: E1
 Contaminated packaging - Instructions: P001, LP01
 Contaminated packaging - Provisions: PP1
 IBC - Instructions: IBC03
 IBC - Provisions: -
 Tank instructions - IMO: -
 Tank instructions - UN: T2
 Tank instructions - Provisions: TP1
 Stowage and handling: Category A.
 Properties and observations: Adhesives are solutions of gums, resins, etc., usually volatile due to the solvents. Miscibility with water depends upon their composition.
 Marine pollutant: no
 Segregation group: none

Air transport (IATA)

UN/ID number: UN 1133
 Proper shipping name: UN 1133, Adhesives
 Class or division, Subsidiary risk: Class 3
 Packing Group: III
 Hazard label: Flamm. liquid
 Excepted Quantity Code: E1
 Passenger and Cargo Aircraft: Ltd.Qty.: Pack.Instr. Y344 - Max. Net Qty/Pkg. 10 L
 Passenger and Cargo Aircraft: Pack.Instr. 355 - Max. Net Qty/Pkg. 60 L
 Cargo Aircraft only: Pack.Instr. 366 - Max. Net Qty/Pkg. 220 L
 Special provisions: A3
 Emergency Response Guide-Code (ERG): 3L

15. Regulatory information

National regulations - U.S. Federal Regulations

Acetone: TSCA Inventory: listed
TSCA HPVC: not listed
Clean Air Act:
SOCMI Chemical: yes
Other Environmental Laws:
CERCLA: RQ 5000 lbs.
RCRA Hazardous Wastes: Code U002
RCRA Groundwater Monitoring: Methods 8240 / PQL 100
NIOSH Recommendations:
Occupational Health Guideline: 0004*

Ethyl acetate: TSCA Inventory: listed; EPA flags T
TSCA HPVC: not listed
Other Environmental Laws:
CERCLA: RQ 5000 lbs.
RCRA Hazardous Wastes: Code U112
NIOSH Recommendations:
Occupational Health Guideline: 0260

National regulations - U.S. State Regulations

Acetone: California Prop 65 List: None
Delaware Air Quality Management List:
DRQ: 5000 - RQ State: Federal Regulations Apply
Idaho Air Pollutant List:
Title 585: AAC: 89 - EL: 119 - OEL: 1780
Massachusetts Haz. Substance codes: 2,4,5,6 F8 F9
Minnesota Haz. Substance:
Codes: AON - Ratings: 7.16 - Status: Title III
New York List of Hazardous Substances:
RQ-Air: 5000 - RQ-Land: 1 - Note: No Note Associated with this chemical.
Pennsylvania Haz. Substance code: E
Washington Air Contaminant:
TWA: 750 ppm - 1800 mg - STEL: 1000 ppm - 2400 mg

Ethyl acetate: Delaware Air Quality Management List:
DRQ: 5000 - RQ State: Federal Regulations Apply
Idaho Air Pollutant List:
Title 585: AAC: 70 - EL: 93,3 - OEL: 1400 - Title 586: -
Main Hazardous Air Pollutants:
Me 2005: HAP - Hap Rpt: 20000
Massachusetts Haz. Substance codes: 2,4,5,6 F8
Minnesota Haz. Substance:
Codes: AO - Ratings: 6.83 - Status: Title III.
New York List of Hazardous Substances:
RQ-Air: 5000 - RQ-Land: 1 - Note: No Note Associated with this chemical.
Pennsylvania Haz. Substance code: E
Washington Air Contaminant:
TWA: 400 ppm - 1400 mg

National regulations - Great Britain

Hazchem-Code: •3YE

16. Other information

Text for labeling: Contains $\geq 50\%$ Acetone, 25 - 50 % Ethyl acetate. Safety data sheet available on request.

Hazard rating systems: NFPA Hazard Rating:



Health: 1 (Slight)

Fire: 3 (Serious)

Reactivity: 0 (Minimal)

HMIS Version III Rating:

Health: 1 (Slight)

Flammability: 3 (Serious)

Physical Hazard: 0 (Minimal)

Personal Protection: X = Consult your supervisor

HEALTH	1
FLAMMABILITY	3
PHYSICAL HAZARD	0
	X

Reason of change: Changes in section 1.3: Corporate headquarters

Date of first version: 10/30/1994

Department issuing data sheet

Contact person: see section 1: Dept. 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.