



MATERIAL SAFETY DATA SHEET

in accordance with 29 CFR 1910.1200 and ANSI standard Z400.1-2004

Date of print: 5/2/2008

Revision date: 2/5/2007

Date of first version: 10/5/1994

636W25 - Polyurethane Adhesive

Material number 636W25

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1. Product and company identification

Identification of the substance or preparation

Name of product: 636W25 - Polyurethane Adhesive

Company / undertaking identification

Company name: Otto Bock Health Care

Street/POB-No.: 2 Carlson Parkway North

Suite 100

State/city/postal code: USA Plymouth, MN 55447

World Wide Web: www.ottobockus.com

Telephone: +1-763-553-9464

Telefax: +1-763-519-6153

Dept. responsible for information:

MSDS Department,

Telephone: +1-763-253-5618

(9 am - 5 pm), Email: tamera.helps@ottobock.com

Emergency telephone

CHEMTREK, Telephone: +1-800-424-9300

2. Hazards identification

Emergency overview

Physical state: liquid

Color: yellowish

Odor: characteristic

Danger

Irritant

Highly flammable.

Regulatory status

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

Potential Health Effects

Vapors may cause drowsiness and dizziness.

Irritating to eyes.

Repeated exposure may cause skin dryness or cracking.

Critical hazard to man and environment:

refer to chapter 11: Toxicological information

3. Composition/information on ingredients

Chemical characterization (preparation)

Polyurethane plastic resin solution adhesive

Dangerous ingredients:

CAS-No.	Chemical name	Content
67-64-1	Acetone	>= 50 %
141-78-6	Ethyl acetic ester	10-20 %
78-93-3	2-Butanon	1-5 %



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4. First aid measures

- General information: Take off respiratory protection only after soiled clothing has been removed.
- Following inhalation: Move victim to fresh air, put at rest and loosen restrictive clothing.
If breathing becomes irregular or ceases, apply mouth-to-mouth breathing or artificial ventilation immediately, where required administer oxygen.
Do not allow victim to become chilled. Keep victim warm.
If victim is at risk of losing consciousness, position and transport on their side.
- After skin contact: Immediately remove any wetted clothing, shoes or stockings.
Immediately clean with water and soap followed by thorough rinsing
- After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Seek medical attention if problems persist.
- After swallowing: Seek medical attention.

Information to physician:

Combat acidosis. Monitor alkali reserves. Monitor breathing.
If breathing becomes irregular or ceases, apply mouth-to-mouth breathing or artificial ventilation immediately, where required administer oxygen.
Attention: several hours latency period.
Symptoms of poisoning may develop several hours following exposure. Victim should be under medical observation for at least 48 hours after exposure.

5. Fire fighting measures

- Flash point / flash point range: -19 °C (DIN 51758)
- Autoflammability: not self-igniting
- Suitable extinguishing media: Water fog, alcohol resistant foam, extinguishing powder, carbon dioxide
- Extinguishing media which must not be used for safety reasons: high power water jet
- Special exposure hazards arising from the preparation itself, combustion products, resulting gases: Can be released in case of fire: Carbon monoxide and carbon dioxide.
Mixtures with 4% acetone mixed with 96% water still have a flash point of 54°C.
- Special protective equipment for fire-fighters: Wear self-contained breathing apparatus.
- Additional information: Cool exposed containers with water spray.

6. Accidental release measures

- Personal precautions: Wear protective equipment. Keep away from unprotected people.
- Environmental precautions: Do not allow to enter drains, basements or pits.
- Methods for cleaning up: Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents) and place in closed containers for disposal.
Remove all sources of ignition. Provide adequate ventilation.
Plug leak if safely possible. Dam spills.
In case of greater quantities: Collect mechanically (use only explosion-proof equipment when pumping out).



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7. Handling and storage

Handling

Information for safe handling:

Provide adequate ventilation.
Avoid the formation of aerosol.

Precautions against fire and explosion:

Keep away from sources of ignition - No smoking.
Take precautionary measures against static discharges.
Exposure to temperatures exceeding 50 degrees Centigrade will increase pressure:
resulting in danger of bursting or explosion.

Storage

Requirements for storerooms and containers:

Keep container tightly closed in a cool, well-ventilated place. Keep container dry.

Further details:

Steel, stainless steel, and aluminium are stable container materials. Copper may be attacked.

8. Exposure controls / personal protection

Exposure guidelines

CAS-No.	Chemical name	Type	Value
67-64-1	Acetone	OSHA-TWA	1000 ppm
		OSHA-TWA	2400 mg/m ³
		NIOSH-TWA	250 ppm
		NIOSH-TWA	590 mg/m ³
		ACGIH-TWA	500 ppm
		ACGIH-STEL	750 ppm
		WEL (Europe) 8-hour TWA	500 ppm
141-78-6	Ethyl acetic ester	WEL (Europe) 8-hour TWA	1210 mg/m ³
		OSHA/NIOSH/ACGIH-TWA	400 ppm
		OSHA/NIOSH-TWA	1400 mg/m ³
		ACGIH-TWA	1440 mg/m ³
		TWA (= German AGW)	400 ml/m ³ = ppm
78-93-3	2-Butanon	TWA (= German AGW)	1500 mg/m ³
		OSHA/NIOSH/ACGIH-TWA	200 ppm
		OSHA/NIOSH/ACGIH-TWA	590 mg/m ³
		NIOSH/ACGIH-STEL	300 ppm
		NIOSH/ACGIH-STEL	885 mg/m ³
		WEL (Europe) 8-hour TWA	200 ppm
		WEL (Europe) 8-hour TWA	600 mg/m ³
WEL (Europe) STEL	300 ppm		
WEL Europe STEL	900 mg/m ³		

Engineering controls

Explosion protection required. Work only with resistant materials. Provide for good ventilation or exhaust system or work with completely self-contained equipment.
See also information in chapter 7, section storage.

Eye protection:

Tightly sealed safety glasses according to EN 166.

Skin protection:

Plastic gloves according to EN 374.

Breakthrough time: > 480 min.

Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Personal protection equipment

Respiratory protection: In case of insufficient ventilation, wear suitable respiratory equipment.
For short exposures or in case of accident: Filter apparatus type A (= against vapors of organic substances). In case of prolonged or repeated exposures: use self-contained breathing apparatus.

General protection and hygiene measures:

Keep away from food, drink and animal feedingstuffs.
Take off immediately all contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with skin and eyes.

9. Physical and chemical properties

Appearance

Physical state: liquid
Color: yellowish
Odor: characteristic

Important health, safety and environmental information

Boiling temperature / boiling range: 56 °C (DIN 53171)
Melting point / melting range: n.a.
Flash point / flash point range: -19 °C (DIN 51758)
Ignition temperature: 460 °C
Autoflammability: not self-igniting
Explosive properties: Product is not explosive.
Explosion limits: LEL (Lower Explosive Limit): 1.2 Vol-%
UEL (Upper Explosive Limit): 13 Vol-%
Vapor pressure: at 20 °C: 233 hPa
Density: at 20 °C: 0.88 g/ml (DIN 51757)
Solubility in water: at 20 °C: slightly miscible
Viscosity, dynamic: at 20 °C: (dynamic) 1850 mPa.s
Solvent content: 83 %
Solid content: 17 %

10. Stability and reactivity

Chemical stability: Product is stable under normal conditions.
Conditions to avoid: Forms explosive mixtures with air, also in empty, uncleaned containers. May become electrostatically charged. Concentrated vapors are heavier than air.
Materials to avoid: Attacks many plastics and rubbers. On contact with barium hydroxide, sodium hydroxide and many other alkaline materials condensation may occur.
Hazardous decomposition products: Can be released in case of fire: Carbon monoxide and carbon dioxide.

11. Toxicological information

Toxicological Tests:

Acute toxicity: LD50 Rat, oral: (toluene) 5000 mg/kg
LD50 Rabbit, dermal: (toluene) 12124 mg/kg
LC50 /4h mouse, inhalant: (toluene) 5320 mg/l



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After skin contact: Not an irritant

After eye contact: irritant

General remarks

sensitization: Not known to cause sensitization.

12. Ecological information

Ecotoxicity

Aquatotoxicity:

Information about Acetone:

Leuciscus idus test:

LC 0: 6320 - 7900 mg/l

LC 50: 7505 - 11300 mg/l

LC100: 10670 - 15800 mg/l

Goldfish::

LC50 / 24h: > 5000 mg/l

Acute toxicity values:

- bacteria: 2,8

- fish: 2,0

Toxic to aquatic organisms.

LD 50 Daphnia magna: 10 mg/l

Toxicological concentration limits:

- Microcystis aeruginosa 530 mg/l

- Entosiphon sulcatum: 28 mg/l

- Pseudomonas putida: 1700 mg/l

- Scenedesmus quadricauda: 7500 mg/l

Additional ecological information

Volatile organic compounds (VOC):

81 % by weight

General information:

Do not allow to enter ground water, sewage or drains.

13. Disposal considerations

Product

Recommendation:

Special waste.

Incinerate according to applicable local, state and federal regulations.

Do not dispose of with household waste. Do not empty into drains.

Contaminated packaging

Recommendation:

Waste disposal according to official state regulations.

Handle contaminated packaging in the same way as the substance itself.

Cleaned containers may be recycled.



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14. Transport information

USA: Department of Transportation (DOT)

Identification Numbers UN1133
Proper Shipping Name UN 1133, ADHESIVES containing flammable liquid
(with a point of ignition below 23 °C and viscous according to 2.2.3.1.4)
(vapor pressure at 50 °C not more than 110 kPa)
contains acetone
DOT Hazard Class or Division F1
PG III

Transport by sea (IMDG)

UN number: 1133
Proper shipping name: Adhesives, containing flammable liquid
IMDG: Class 3, Code -, •
Packing Group: III
EmS: F-E, S-D
Special provisions 223 - 944 - 955
Limited quantities 5 I
Contaminated packaging: Instructions P001 - LP01
Contaminated packaging: Provisions PP1
IBC: Instructions IBC03
IBC: Provisions -
Tank instructions: IMO T1
Tank instructions: UN T2
Tank instructions Provisions TP1
Stowage and segregation 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.



Air transport (IATA)

UN/ID number: 1133
Proper shipping name: Adhesives, containing flammable liquid
ICAO/IATA: Class 3
Hazard Flamm. liquid
PG III
Passenger Ltd.Qty.: Y309 - Maximum quantity: 10 L
Passenger: 309 - Maximum quantity: 60 L
Cargo: 310 - Maximum quantity: 220 L
ERG 3L





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Overland transport (ADR/RID)

Warning board: ADR/RID: Kemmler-number 33, UN number 1133
 Product designation: UN 1133, ADHESIVES containing flammable liquid
 (with a point of ignition below 23 °C and viscous according to
 2.2.3.1.4)
 (vapor pressure at 50 °C not more than 110 kPa)
 contains acetone
 Class 3, Code: F1

ADR/RID: Class 3, Code: F1
 Packaging group: III
 Label: 3
 Special provisions: 640H
 Limited quantities: LQ7
 Contaminated packaging: Instructions: P001 - IBC02 - LP01 - R001
 Contaminated packaging: Special provisions: PP1
 Special provisions for packing together: MP19
 Portable Tanks: Instructions: T2
 Portable Tanks: Special provisions: TP1
 Tank coding: LGBF



15. Regulatory information

U.S. Federal Regulations

Acetone: TSCA Inventory: listed
 TSCA HPVC: not listed
 Clean Air Act:
 SOCM 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 acetic ester: TSCA: listed - Flags: T
 Environmental Law Data:
 RCRA code: U112 - CERCLA RQ: 5,000 pounds

2-Butanon: TSCA: listed
 Other Environmental Laws:
 CERCLA: RQ 5000 lbs.
 RCRA Hazardous Wastes: Code U159
 RCRA Groundwater Monitoring: Methods 8015, 8240 / PQL 10, 100
 NIOSH Recommendations:
 Occupational Health Guideline: 0069*

National regulations - EC member states

Code letter and hazard symbol:
 F Highly flammable
 Xi Irritant

R phrase(s):
 R 11 Highly flammable.
 R 36 Irritating to eyes.
 R 66 Repeated exposure may cause skin dryness or cracking.
 R 67 Vapors may cause drowsiness and dizziness.



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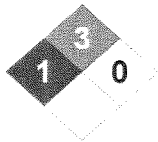
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S phrase(s):	S 16	Keep away from sources of ignition - No smoking.
	S 26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	S 60	This material and its container must be disposed of as hazardous waste.

16. Other information

Text for labeling Hazardous component(s) for labeling: acetone

Hazard rating systems



NFPA Hazard Rating:

Health: 1 (Slight)

Fire: 3 (Serious)

Reactivity: 0 (Minimal)

Reason of change:

Changes in section 14: ADNR 2007, IMDG 2006

Changes in section 15: NFPA

General revision

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.