

1. Product and company identification

Product identifier

Trade name: 636W26 - Promoter for 636W25

This safety data sheet pertains to the following products:
636W26=1 = Vernetzer

Recommended use and restrictions on use

General use: Cross linking 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: brown

Odor: Characteristic

Classification: Flammable Liquid 2. Acute Toxicity 4 (inhalative). Skin Irritation 2. Eye Irritation 2A.
Respiratory Sensitizer 1. Sensitization - skin 1. Carcinogenicity 2.
Specific Target Organ Toxicity (Single Exposure) 3.
Specific Target Organ Toxicity (Repeated Exposure) 2.

Hazard symbols:



Signal word:

Danger

Hazard statements:

Highly flammable liquid and vapor.
Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
Harmful if inhaled.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause respiratory irritation.
May cause drowsiness or dizziness.
Suspected of causing cancer.
May cause damage to organs through prolonged or repeated exposure.

Precautionary statements:

Obtain special instructions before use.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Do not breathe mist/vapors/spray.
Avoid breathing dust/fume/gas/mist/vapors/spray.
Wear protective gloves/protective clothing/eye protection.
Call a POISON CENTER/doctor if you feel unwell.
If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
Take off contaminated clothing and wash it before reuse.
In case of fire: Use sand, extinguishing powder or alcohol resistant foam to extinguish.

Regulatory status

This material is considered hazardous by the WHMIS in Canada.

Hazards not otherwise classified

Potentially explosive mixtures may form if adequate ventilation is not provided.
see section 11: Toxicological information

3. Composition / Information on ingredients

Relevant ingredients:

CAS No.	Designation	Concentration	Classification
CAS 141-78-6	Ethyl acetate	70 - 90 %	Flammable Liquid 2. Eye Irritation 2A. Specific Target Organ Toxicity (Single Exposure) 3.
CAS 9016-87-9	Diphenylmethane diisocyanate (polymer)	10 - 20 %	Acute Toxicity 4 (inhalative). Skin Irritation 2. Eye Irritation 2A. Respiratory Sensitizer 1. Sensitization - skin 1. Carcinogenicity 2. Specific Target Organ Toxicity (Single Exposure) 3. Specific Target Organ Toxicity (Repeated Exposure) 2.
CAS 108-90-7	Chlorobenzene	< 1 %	Flammable Liquid 3. Acute Toxicity 4 (oral). Acute Toxicity 4 (inhalative). Skin Irritation 2. Aquatic toxicity - acute 1. Aquatic toxicity - chronic 2.
CAS 4083-64-1	p-Toluenesulphonyl isocyanate	< 1 %	Skin Irritation 2. Eye Irritation 2A. Respiratory Sensitizer 1. Specific Target Organ Toxicity (Single Exposure) 3.
CAS 26447-40-5	Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl) phenyl isocyanate	< 1 %	Acute Toxicity 4 (inhalative). Skin Irritation 2. Eye Irritation 2A. Respiratory Sensitizer 1. Sensitization - skin 1. Carcinogenicity 2. Specific Target Organ Toxicity (Single Exposure) 3. Specific Target Organ Toxicity (Repeated Exposure) 2.

4. First aid measures

General information:	If medical advice is needed, have product container or label at hand. First aider: Pay attention to self-protection!
In case of inhalation:	Move victim to fresh air, put at rest and loosen restrictive clothing. Do not allow victim to become chilled. Keep victim warm. Position and transport victim on their side. In case of respiratory distress, bring into semi-upright, seated position. If breathing becomes irregular or ceases, apply rescue breathing or artificial respiration immediately, where required supply oxygen. Seek medical attention.
Following skin contact:	Immediately clean with water and soap followed by thorough rinsing. 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. Subsequently consult an ophthalmologist.
After swallowing:	Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Do not induce vomiting. Immediately get medical attention.

Most important symptoms and effects, both acute and delayed

Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. Causes serious eye irritation. Causes skin irritation. May cause respiratory irritation. May cause drowsiness or dizziness. May cause damage to organs through prolonged or repeated exposure.

Small quantities: May cause allergic reactions in already sensitized persons.

Other symptoms: irritation to respiratory tract, eye irritations, chest congestion, respiratory complaints.

Information to physician

Treat symptomatically.

Shortage of breath after inhalation: Medical surveillance necessary for at least 48 hours.

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:

-4 °C

Auto-ignition temperature: not self-igniting

Suitable extinguishing media:

Water spray jet, alcohol resistant foam, extinguishing 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.

Air combined with vapors may form potentially explosive mixtures that are heavier than air. Vapors may proceed on the ground over great distances and cause fire and backflashes.

Furthermore, there may develop: Nitrous fumes, isocyanates, hydrogen cyanide, carbon monoxide and carbon dioxide

Special protective equipment and precautions for fire-fighters:

Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information:

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

In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Do not allow fire water to penetrate into surface or ground water.

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:

Avoid exposure. Provide adequate ventilation. Eliminate all ignition sources if safe to do so. Remove persons not involved upwind.

If possible, eliminate leakage.

Do not breathe mist/vapors/spray. Avoid contact with the substance. Wear appropriate protective equipment. Keep unprotected people away. Take off contaminated clothing and wash it before reuse.

Environmental precautions:

Do not allow to enter drains, basements or pits.
If necessary, notify appropriate authorities.

Methods for clean-up:

Seal off. Remove all sources of ignition. Plug leak if safely possible. In case of greater quantities: Collect mechanically (use only explosion-proof equipment when pumping out). Absorb leftover product with non-flammable liquid-binding material (e.g. earth, sand, vermiculite or ground sand stone) and place in closed containers for disposal. Seal all low level rooms.

7. Handling and storage

Handling

Advices on safe handling: Obtain special instructions before use. Make sure there is sufficient air exchange and / or that working rooms are air suctioned.
Avoid contact with skin and eyes. Do not breathe mist/vapors/spray. Do not allow containers to stand open. Store product in a quantity adequate for 1 work-shift only.
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. When handling large quantities, supply emergency spray.

Precautions against fire and explosion:

Keep away from sources of ignition - No smoking.
Take precautionary measures against static discharge.
Use only explosion-protected equipment/instruments. Do not weld.
In partially filled containers explosive mixtures may form.

Storage

Requirements for storerooms and containers:

Store container tightly closed in a dry and cool place.
Steel and stainless steel are stable container materials.
Protect from heat and direct sunlight. Store containers in upright position.
Shelf life: approx. 12 months

Hints on joint storage:

Keep away from food, drink and animal feedingstuffs.
Do not store together with: Alcohols, amines, acids, alkalis, water

Further details:

Use caution when opening containers under pressure.

8. Exposure controls / personal protection

Exposure guidelines

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
141-78-6	Ethyl acetate	Canada: OEL 8 hour	1,440 mg/m ³ ; 400 ppm
		Canada: OEL TWA	150 ppm
		Canada: VEMP	1,440 mg/m ³ ; 400 ppm
9016-87-9	Diphenylmethane diisocyanate (polymer)	Canada: OEL 8 hour	0.07 mg/m ³ ; 0.005 ppm
108-90-7	Chlorobenzene	Canada: OEL 8 hour	46 mg/m ³ ; 10 ppm
		Canada: OEL TWA	10 ppm
		Canada: VEMP	10 ppm

Engineering controls

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

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: Flame retardant, antistatic and chemical resistant protective clothing.

Protective gloves according to OSHA Standard - 29 CFR: 1910.138.

Permanent contact, max. 15 minutes:

Glove material: butyl caoutchouc (butyl rubber), ≥ 0.7 mm

Breakthrough time: ≥ 15 minutes

Splash guard:

Glove material: nitrile rubber (gloves with long cuffs), ≥ 0.12 mm

After contamination with product change the gloves immediately and dispose them off according to relevant national and local regulations.

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. Use combination filter type A-P2 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. In case of prolonged or repeated exposures: use self-contained breathing apparatus.

General hygiene considerations:

Obtain special instructions before use. Wash hands before breaks and after work.

Do not breathe mist/vapors/spray. Avoid contact with skin and eyes.

Keep away from food and drinks.

Take off contaminated clothing and wash it before reuse. When handling large quantities, supply emergency spray.

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: brown

Odor: Characteristic

Odor threshold: Not determined

pH: Not determined

Melting point/freezing point: Not determined

Initial boiling point and boiling range: 76 °C

Flash point/flash point range: -4 °C

Evaporation rate: No data available

Flammability: Highly flammable liquid and vapor.

Explosion limits: No data available

Vapor pressure:	at 20 °C: 100 hPa
Vapor density:	No data available
Density:	at 20 °C: approx. 0.97 g/mL
Water solubility:	Partially soluble, reacts with water
Partition coefficient: n-octanol/water:	No data available
Auto-ignition temperature:	not self-igniting
Thermal decomposition:	No data available
Explosive properties:	Product is not explosive. Potentially explosive vapor/air mixtures may form.
Ignition temperature:	Not determined

10. Stability and reactivity

Reactivity:	Highly flammable liquid and vapor. Vapors may form explosive mixtures with air. When mixed with water, forms byproducts that are hazardous to health. Especially in closed containers potentially explosive mixtures may form above water surface.
Chemical stability:	Stable under recommended storage conditions.
Possibility of hazardous reactions:	Heating will lead to pressure increase: Danger of bursting and explosion. Reactions with alcohols, amines, liquid acids and bases. Reacts with water, forming carbon dioxide, producing bursting hazard in closed containers due to build-up of pressure.
Conditions to avoid:	Keep away from heat sources, sparks and open flames. Protect from direct sunlight. Protect from moisture contamination.
Incompatible materials:	Alcohols, amines, acids, alkalis Various plastics are incompatible work materials.
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.

Acute toxicity (dermal): Based on available data, the classification criteria are not met.

Acute toxicity (inhalative): Acute Toxicity 4 (inhalative) = Harmful if inhaled.

ATEmix (calculated, dust/mist): 3.22 mg/L/4h

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

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

Sensitisation to the respiratory tract: Respiratory Sensitizer 1 = May cause allergy or asthma symptoms or breathing difficulties if inhaled.

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

Germ cell mutagenicity/Genotoxicity: Lack of data.

Carcinogenicity: Carcinogenicity 2 = Suspected of causing cancer.

Reproductive toxicity: Lack of data.

Effects on or via lactation: Lack of data.

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

Specific target organ toxicity (repeated exposure): Specific Target Organ Toxicity (Repeated Exposure) 2 = May cause damage to organs through prolonged or repeated exposure.

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

Other information: Information about ethyl acetate (CAS 141-78-6):

LD50 Rat, oral: 5,620 mg/kg

LD50 Rabbit, dermal: > 20,000 mg/kg

LC50 Rat, inhalative: 22.5 mg/L/4h

Information about Diphenylmethane diisocyanate (polymer, CAS 9016-87-9):

LC50 Rat, inhalative (dust/mist): 0.49 mg/L/4h

ATE inhalative (dust/mist, calculated): 1.5 mg/L

Information about Chlorobenzene (CAS 108-90-7):

LD50 Rat, oral: 1,100 mg/kg

Information about 4-Isocyanatosulphonyltoluene (CAS 4083-64-1):

LC50 Rat, inhalative (vapor): > 640 ppm/1h

Information about Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate (CAS 26447-40-5):

LC50 Rat, inhalative (dust/mist): 0.368 mg/L/4h

ATE inhalative (dust/mist): 1.5 mg/L

Symptoms

Small quantities: May cause allergic reactions in already sensitized persons.

Other symptoms: irritation to respiratory tract, eye irritations, chest congestion, respiratory complaints.

After eye contact: Upon direct contact with eyes may cause burning, tearing, redness.

12. Ecological information

Ecotoxicity

Aquatic toxicity: Forms carbon dioxide and turns into a hard and insoluble by-product (poly urea) on the water's edge.

Information about ethyl acetate (CAS 141-78-6):

Fish toxicity:

LC50 Pimephales promelas (fathead minnow): 220 - 250 mg/L/96h

Information about Chlorobenzene (CAS 108-90-7):

Fish toxicity:

LC50 Lepomis macrochirus (Bluegill): 4.1 - 4.9 mg/L/96h

Daphnia toxicity:

EC50 Daphnia magna (Big water flea): 0.59 mg/L/48h

Algae toxicity:

EC50 Pseudokirchneriella subcapitata (green algae): 2.55 - 420 mg/L/96h

Mobility in soil

No data available

Persistence and degradability

Further details: No data available

Additional ecological information

Volatile organic compounds (VOC):

75.81 % by weight / 742.9 g/L

General information:

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

Very toxic to aquatic life. Toxic effect on fish.

Avoid spills and leaks. Very small amounts contaminates drinking water.

13. Disposal considerations

Product

Recommendation: Incinerate according to applicable local, state and federal regulations.

Package

Recommendation: Handle empty containers with care. Incineration may cause explosion.
Dispose of waste according to applicable legislation.

14. Transport information

UN number

ADR/RID, IMDG, IATA-DGR:

UN 1173

UN proper shipping name

ADR/RID, IMDG, IATA-DGR:

UN 1173, ETHYL ACETATE mixture

Transport hazard class(es)

ADR/RID: Class 3, Code: F1
IMDG: Class 3, Subrisk -
IATA-DGR: Class 3



Packing group

ADR/RID, IMDG, IATA-DGR:

II

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)

UN Number: UN1173
Shipping name: UN 1173, ethyl acetate mixture
TDG class: 3
Packing group: II
Explosive limit and limited quantity index: 1L
Passenger carrying road or rail index: 5L

Sea transport (IMDG)

UN number: UN 1173
Proper shipping name: UN 1173, ETHYL ACETATE mixture
Class or division, Subsidiary risk: Class 3, Subrisk -
Packing Group: II
EmS: F-E, S-D
Special Provisions: -
Limited quantities: 1 L
Excepted quantities: E2
Package - Instructions: P001
Package - Provisions: -
IBC - Instructions: IBC02
IBC - Provisions: -
Tank instructions - IMO: -
Tank instructions - UN: T4
Tank instructions - Provisions: TP1
Stowage and handling: Category B.
Properties and observations: Colourless liquid with a fragrant odour. Flashpoint: - 4°C c.c. Explosive limits: 2,18% to 11,5%. Immiscible with water.
Marine pollutant: no
Segregation group: none

Air transport (IATA)

UN/ID number: UN 1173
Proper shipping name: UN 1173, ETHYL ACETATE mixture
Class or division, Subsidiary risk: Class 3
Packing Group: II
Hazard label: Flamm. liquid
Excepted Quantity Code: E2
Passenger and Cargo Aircraft: Ltd.Qty.: Pack.Instr. Y341 - Max. Net Qty/Pkg. 1 L
Passenger and Cargo Aircraft: Pack.Instr. 353 - Max. Net Qty/Pkg. 5 L
Cargo Aircraft only: Pack.Instr. 364 - Max. Net Qty/Pkg. 60 L
Emergency Response Guide-Code (ERG): 3L

15. Regulatory information

National regulations - Canada

Ethyl acetate: DSL: listed
Diphenylmethane diisocyanate (polymer): DSL: listed
Chlorobenzene: DSL: listed
p-Toluenesulphonyl isocyanate: DSL: listed
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate: DSL: listed

16. Other information

Text for labeling: Contains 70 - 90 % Ethyl acetate, 10 - 20 % Diphenylmethane diisocyanate (polymer), < 1 % Chlorobenzene, < 1 % p-Toluenesulphonyl isocyanate, < 1 % Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate.
As from 24 August 2023 adequate training is required before industrial or professional use.

Hazard rating systems:



NFPA Hazard Rating:

Health: 2 (Moderate)
Fire: 3 (Serious)
Reactivity: 0 (Minimal)

HMIS Version III Rating:

Health: 2 (Moderate) - Chronic effects
Flammability: 3 (Serious)
Physical Hazard: 0 (Minimal)
Personal Protection: X = Consult your supervisor

HEALTH	*	2
FLAMMABILITY		3
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
 ATE: Acute toxicity estimate
 ATEmix: Acute Toxicity Estimate of mixture
 Carcinogenicity: Carcinogenicity
 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 Irritation: Eye irritation
 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%
 MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
 OEL: Occupational Exposure Limit Value
 OSHA: Occupational Safety and Health Administration
 PBT: Persistent, bioaccumulative and toxic
 PNEC: Predicted no-effect concentration
 Respiratory Sensitizer: Sensitisation to the respiratory tract
 RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail
 Sensitization - skin: Skin sensitisation
 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
 UN: United Nations
 vPvB: Very persistent and very bioaccumulative
 WEL: Workplace Exposure Limit
 WHMIS: Workplace Hazardous Materials Information System

Reason of change:

Changes in section 1: Changes of product list
 Changes in section 2: Classification, labeling
 Changes in section 3: Composition/information on ingredients
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 Changes in section 8: DNEL and PNEC values
 Changes in section 11: Toxicological information
 Changes in section 12: Ecological information
 General revision

Date of first version:

30/10/1994

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.