1. Product and company identification

Product identifier

Trade name: 636W28 - O.B. Special Glue Cartridge A & B
Two-component glue: 636W28=A and 636W28=B

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

General use: 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

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: Form: pasty
Color: beige, gray
Odor: amine odor, weakly aromatic

Classification: Skin Corrosion - Category 1B; Sensitization - skin - Category 1; Reproductive toxicant - Category 2; Aquatic toxicity - chronic - Category 2;

Hazard symbols:

Signal word: **Danger**

Hazard statements:
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
Suspected of damaging the unborn child.
Toxic to aquatic life with long lasting effects.

Precautionary statements:

Obtain special instructions before use.
Do not breathe dust/fume/gas/mist/vapors/spray.
Avoid breathing dust/fume/gas/mist/vapors/spray.
Wash hands and face thoroughly after handling.
Contaminated work clothing should not be allowed out of the workplace.
Avoid release to the environment.
Wear protective gloves and eye protection.
IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
IF ON SKIN: Wash with plenty of water/soap.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Get medical advice/attention.
Immediately call a POISON CENTER/doctor.
Specific treatment (see ' First aid ' on this label).
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
Collect spillage.
Store locked up.
Dispose of contents/container to hazardous or special waste collection point.

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

May be harmful if inhaled.
Damages of health may occur with delay.
see section 11: Toxicological information

3. Composition / Information on ingredients

Hazardous ingredients:

CAS No.	Designation	Content	Classification
CAS 25068-38-6	Bisphenol A epoxy resin (molecular-weight < 700)	30 - 60 %	Skin Irritation - Category 2. Eye Irritation - Category 2A. Sensitization - skin - Category 1. Aquatic toxicity - chronic - Category 2.
CAS 9003-36-5	Bisphenol F Epoxy Resin	13 - 30 %	Skin Irritation - Category 2. Eye Irritation - Category 2A. Sensitization - skin - Category 1. Aquatic toxicity - chronic - Category 2.
CAS 111-40-0	Diethylene triamine	3 - 7 %	Acute Toxicity - oral - Category 4. Acute Toxicity - dermal - Category 4. Skin Corrosion - Category 1B. Sensitization - skin - Category 1.
CAS 80-05-7	4,4'-Isopropylidenediphenol	3 - 7 %	Eye Damage - Category 1. Sensitization - skin - Category 1. Reproductive toxicant - Category 2. Specific Target Organ Toxicity (Single Exposure) - Category 3. Aquatic toxicity - chronic - Category 2.
CAS 112-24-3	Triethylentetramine	3 - 7 %	Acute Toxicity - dermal - Category 4. Skin Corrosion - Category 1B. Sensitization - skin - Category 1. Aquatic toxicity - chronic - Category 3.

4. First aid measures

General information: Immediately remove any wetted clothing, shoes or stockings. Wash contaminated clothing prior to re-use.

In case of inhalation: Move victim to fresh air; if necessary, provide artificial respiration or oxygen. Seek medical attention if problems persist.

Following skin contact: Take off immediately all contaminated clothing.
After contact with skin, wash immediately with soap and plenty of water.
Immediately get medical attention. Take off contaminated clothing and wash it before reuse.

After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Afterwards, consult an ophthalmologist immediately.

After swallowing: Rinse mouth with water. Have victim drink large quantities of water, with active charcoal if possible.
Do not induce vomiting.
In case of vomiting, position victim on their side. Never give anything by mouth to an unconscious person. Immediately get medical attention.

Most important symptoms/effects, acute and delayed

Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
In case of inhalation: Mucous membrane irritation, cough, shortage of breath.
Other symptoms: Reddening, causes tears.
Damages of health may occur with delay.

Information to physician

Treat symptomatically.
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:

Curing agent 255.2 °F (o.c.)

Auto-ignition temperature: no data available

Suitable extinguishing media:

Water fog, foam, dry chemical powder, carbon dioxide.

Extinguishing media which must not be used for safety reasons:

strong water jet

Specific hazards arising from the chemical

In case of fire may be liberated: hydrochloric acid, aldehydes, metallic oxides, nitrogen oxides (NOx), carbon monoxide and carbon dioxide
May form dangerous gases and vapours in case of fire.

Protective equipment and precautions for firefighters:

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

Additional information: Cool exposed containers with water spray.
Do not allow water used to extinguish fire to enter drains, ground or waterways. Treat runoff as hazardous.

6. Accidental release measures

Personal precautions: Eliminate all ignition sources if safe to do so.
Avoid contact with skin, eyes, and clothing.
Do not breathe vapors. Provide adequate ventilation.
Keep unprotected people away. Wear protective equipment. Take off contaminated clothing and wash it before reuse.
Avoid exposure.

Environmental precautions:

Do not allow to enter drains, surface waters, basements or pits.

Methods for clean-up: Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Provide good ventilation. Dispose of waste according to applicable legislation.

7. Handling and storage

Handling

Advices on safe handling: Provide good ventilation and/or an exhaust system in the work area.
Avoid contact with skin, eyes, and clothing.
Do not breathe vapor or spray. Wear protective equipment.
Take off contaminated clothing and wash it before reuse.
Obtain special instructions before use.

Precautions against fire and explosion:

Keep away from sources of ignition. - No smoking.

Storage

Requirements for storerooms and containers:

Keep only in the original container.
Keep container tightly closed and dry.
Keep in a cool place.
storage temperature 35.6 - 104 °F. Protect from direct sunlight.

Hints on joint storage: Avoid contact with strong acids, strong bases and strong oxidizing agents.
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
111-40-0	Diethylene triamine	USA: ACGIH: TWA USA: NIOSH: TWA	4.2 mg/m³; 1 ppm 4 mg/m³; 1 ppm

Engineering controls

Provide adequate ventilation.
Use only explosion-protected equipment/instruments.
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 closed work clothing.

Protective gloves according to OSHA Standard - 29 CFR: 1910.138.
Glove material: polychloroprene-Layer thickness: 0,65 mm
Breakthrough time: >480 min.
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Respiratory protection: If necessary:
Use filter type A (= against vapors of organic substances) according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2.

General hygiene considerations:

Avoid contact with skin and eyes.
Keep away from sources of ignition. - No smoking.
Wash hands before breaks and after work.
Do not breathe vapor or spray.
Keep away from food, drink and animal feedingstuffs.
Take off contaminated clothing and wash it before reuse.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance: Form: pasty
Color: beige, gray

Odor: amine odor, weakly aromatic

Odor threshold: no data available

pH value:	Curing agent 12
Melting point/freezing point:	no data available
Initial boiling point and boiling range:	no data available
Flash point/flash point range:	Curing agent 255.2 °F (o.c.)
Evaporation rate:	no data available
Flammability:	no data available
Explosion limits:	no data available
Vapor pressure:	Curing agent 0.004 hPa
Vapor density:	no data available
Density:	no data available
Water solubility:	insoluble
Partition coefficient: n-octanol/water:	no data available
Auto-ignition temperature:	no data available
Thermal decomposition:	>200°C
Additional information:	no data available

10. Stability and reactivity

Reactivity: refer to section 10.3

Chemical stability: Stable under recommended storage conditions.

Possibility of hazardous reactions

Reacts with: strong acids strong bases.

Conditions to avoid: Static discharges
Protect from direct sunlight. Keep away from heat.

Incompatible materials: Avoid contact with strong acids, strong bases and strong oxidizing agents.

Hazardous decomposition products:

In case of fire may be liberated: hydrochloric acid, aldehydes, metallic oxides nitrogen oxides (NOx), carbon monoxide and carbon dioxide
May form dangerous gases and vapours in case of fire.

Thermal decomposition: >200°C

11. Toxicological information

Toxicological tests

Toxicological effects:

Acute toxicity (oral): Lack of data.

Acute toxicity (dermal): Lack of data.

Acute toxicity (inhalative): Lack of data.

Skin corrosion/irritation, eye damage/irritation: Skin Corrosion - Category 1B = Causes severe skin burns and eye damage.

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: Reproductive toxicant - Category 2 = Suspected of damaging the unborn child.

Effects on or via lactation: Lack of data.

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

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

Aspiration hazard: Lack of data.

Other information:

Information about Bisphenol-A epoxy resin (average molecular weight </=700):
NOAEL Rat, oral 540 mg/kg (OECD 416),
NOAEL Rat, oral 50 mg/kg (OECD 408),
NOEL Rat, dermal 10 mg/kg (OECD 411),
NOAEL Rat, dermal 100 mg/kg (OECD 411),
LC50 Rat, inhalative 0,00001 ppm/5 h

Information about Bisphenol F Epoxy Resin:
NOAEL Rat, oral 250 mg/kg (OECD 408)

Information about 4,4'-Isopropylidenediphenol:
NOAEL Rat, oral 5 mg/kg, NOEC inhalative 10 mg/m³

Information about Triethylentetramine:
NOAEL oral 50 mg/kg,
LD50 Rat, oral 1716 mg/kg, LD50 Rabbit, dermal 1465 mg/kg

Symptoms

In case of inhalation:
Information about 4,4'-Isopropylidenediphenol and Triethylentetramine: Mucous membrane irritation, cough, shortage of breath.
In case of ingestion: Risk of perforation in the oesophagus and stomach.
After contact with skin: Reddening. Danger of cutaneous absorption.
After eye contact: Reddening, causes tears.

12. Ecological information

Ecotoxicity

Aquatic toxicity: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Reaction product with Bisphenol-A-(epichlorhydrin) epoxy resin (molecular weight <=700):

Algae toxicity:
EC50 algae: 220 mg/L/96h.
Daphnia toxicity:
EC50 Daphnia magna (Big water flea): 1,1 - 3,6 mg/L/24h.
Fish toxicity:
LC50 Oncorhynchus mykiss: 1,5 - 7,7 mg/L/96h.

Information about Triethylentetramine:
Fish toxicity: LC 0 Leuciscus idus: 200 mg/L /48 h.

Mobility in soil

no data available

Persistence and degradability

Further details: Information about Reaction product with Bisphenol A-epichlorhydrin epoxy resin (molecular weight = 700):
Biodegradation: 12% (OECD 301 B).
Biodegradation: 5% (OECD 301 F).
Product is not readily biodegradable.

Information about 4,4'-Isopropylidenediphenol: Product is not readily biodegradable.

Additional ecological information

Volatile organic compounds (VOC):
0 % by weight

General information: Do not empty into drains.

13. Disposal considerations

Product

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

Contaminated packaging

Recommendation: Dispose of waste according to applicable legislation.
Non-contaminated packages may be recycled.

14. Transport information

USA: Department of Transportation (DOT)

Identification numbers:	UN2735
Proper shipping name:	UN 2735, POLYAMINES, LIQUID, CORROSIVE, N.O.S. Contains Diethylenetriamine and Triethylentetramine
DOT hazard class or division:	8
PG:	II
Label codes:	8
Symbols:	G
Special provisions:	B2, IB2, T11, TP1, TP27
Packaging - Exceptions:	154
Packaging - Non-bulk:	202
Packaging - Bulk:	242
Quantity limitations - Passenger aircraft / rail:	1 L
Quantity limitations - Cargo only:	30 L
Vessel stowage - Location:	A
Vessel stowage - Other:	52

Sea transport (IMDG)

UN number:	UN 2735
Proper shipping name:	UN 2735, POLYAMINES, LIQUID, CORROSIVE, N.O.S. Contains Diethylenetriamine and Triethylentetramine
IMDG:	Class 8, Subrisk -
Packing Group:	II
EmS:	F-A, S-B
Special provisions:	274
Limited quantities:	1 L
EQ:	E2
Contaminated packaging - Instructions:	P001
Contaminated packaging - Provisions:	-
IBC - Instructions:	IBC02
IBC - Provisions:	-
Tank instructions - IMO:	-
Tank instructions - UN:	T11
Tank instructions - Provisions:	TP1, TP27
Stowage and handling:	Category A.
Segregation:	SG35
Properties and observations:	Colourless to yellowish liquids or solutions with a pungent odour. Miscible with or soluble in water. When involved in a fire, evolve toxic gases. Corrosive to most metals, especially to copper and its alloys. React violently with acids. Cause burns to skin, eyes and mucous membranes.
Marine pollutant:	yes
Segregation group:	18

Air transport (IATA)

UN/ID number:	UN 2735
Proper shipping name:	UN 2735, POLYAMINES, LIQUID, CORROSIVE, N.O.S. Contains Diethylenetriamine and Triethylentetramine
ICAO/IATA:	Class 8
PG:	II
Hazard:	Corrosive
EQ:	E2
Passenger Ltd.Qty.:	Pack.Instr. Y840 - Max. Net Qty/Pkg. 0.5 L
Passenger:	Pack.Instr. 851 - Max. Net Qty/Pkg. 1 L
Cargo:	Pack.Instr. 855 - Max. Net Qty/Pkg. 30 L
Special Provisioning:	A3 A803
ERG:	8L

15. Regulatory information

National regulations - U.S. Federal Regulations

Product:	SARA Title III - Section 313 Supplier Notification: See chapter 2
Bisphenol A epoxy resin (molecular-weight < 700):	TSCA Inventory: listed; EPA flags XU TSCA HPVC: not listed
Bisphenol F Epoxy Resin:	TSCA: listed - Flags: XU
Diethylene triamine:	TSCA listed
4,4'-Isopropylidenediphenol:	TSCA Inventory: listed TSCA HPVC: not listed Clean Air Act: Hazardous Air Pollutants: yes SOCMI Chemical: yes Other Environmental Laws: SARA Title III Section 313, Toxic Release: Conc. 1.0% / Threshold Standard
Triethylentetramine:	TSCA Inventory: listed TSCA HPVC: not listed

National regulations - U.S. State Regulations

Diethylene triamine:

California Proposition 65 code: -
Idaho Air Pollutant List:
Title 585: AAC: 0.2 - EL: 0.267 - OEL: 4 - Title 586: -
Massachusetts Haz. Substance codes: 4,5,6
Minnesota Haz. Substance:
Codes: A - Ratings: -
Pennsylvania Haz. Substance code: -
Washington Air Contaminant:
TWA: 1 ppm - 4 mg
Skin: Protective measures should be taken to prevent or reduce skin absorption.

4,4'-Isopropylidenediphenol:

California Proposition 65 code: -
Delaware Air Quality Management List:
DRQ: 100 - RQ State: State requirement differs from Federal
Massachusetts Haz. Substance codes: F9
New Jersey RTK Hazardous Substance:
DOT: -- - Sub No.: 2388 - TPQ: -
Pennsylvania Haz. Substance code: E
California Proposition 65: female
Rhode Island HSL: listed

Triethylentetramine:

California Proposition 65 code: -
Massachusetts Haz. Substance codes: 6
Pennsylvania Haz. Substance code: -

National regulations - Great Britain

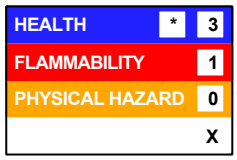
Hazchem-Code: 2X

16. Other information

Text for labeling: Contains 30 - 60 % Bisphenol A epoxy resin (molecular-weight < 700), 13 - 30 % Bisphenol F Epoxy Resin, 3 - 7 % Diethylene triamine, 3 - 7 % 4,4'-Isopropylidenediphenol, 3 - 7 % Triethylentetramine. Safety data sheet available on request.

Hazard rating systems:

NFPA Hazard Rating:
Health: 3 (Serious)
Fire: 1 (Slight)
Reactivity: 0 (Minimal)



HMIS Version III Rating:
Health: 3 (Serious) - Chronic effects
Flammability: 1 (Slight)
Physical Hazard: 0 (Minimal)
Personal Protection: X = Consult your supervisor

Reason of change: Changes in section 14: IMDG 2015, General revision
Date of first version: 11/26/2014

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.