

1. Product and company identification

Product identifier

Trade name: 616T52 - ThermoLyn rigid (polystyrene)

Recommended use and restrictions on use

General use: Article for orthopedic procedures
Processing at Processing temperature and Forming temperature
(refer to section 9: Physical and chemical properties)
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: Form: solid, plate
Color: transparent, colorless

Odor: weak characteristic

Classification: Article not subject to hazard labeling or classification.

Regulatory status

This material is not considered hazardous by the U.S. OSHA Hazard Communication Standard (29 CFR 1910.1200) and WHMIS in Canada.

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Hazards not otherwise classified

Processing by heating can produce vapors. Processing, e.g. by cutting, sawing or grinding, can produce particles and dust. For risks which have to be observed thereby, see section 7: Handling, section 8: Exposure controls / personal protection and section 11: Toxicology.

In case of heating: risk of burns.

dust/vapors: mild irritant.

see section 11: Toxicological information

3. Composition / Information on ingredients

Chemical characterisation: Thermoplastic-Polystyrene
copolymer based on Styrene and 1,3-Butadiene

4. First aid measures

General information: For mechanical processing: dust formation.
In case of heating: development of gas/vapor possible.

In case of inhalation: When vapors form:
Provide fresh air. Seek medical treatment in case of troubles.

Following skin contact: Remove residues with water.
If burned by hot product, quench immediately with cold tap water.
Do not peel solidified product off the skin. Consult physician immediately.

After eye contact: In the case of the formation of dust / When vapors form:
Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart.
In case of troubles or persistent symptoms, consult an ophthalmologist.

Most important symptoms and effects, both acute and delayed

In case of heating: risk of burns.

dust/vapors: mild irritant.

Information to physician

Treat symptomatically.

5. Fire fighting measures

Flash point/flash point range: No data available

Auto-ignition temperature: No data available

Suitable extinguishing media: Water spray jet, foam, extinguishing powder, carbon dioxide.

Extinguishing media which must not be used for safety reasons: Full water jet

Specific hazards arising from the chemical

In case of fire may be liberated: 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.

6. Accidental release measures

- Personal precautions: If necessary: Suitable protective clothing.
In case of development of vapors or dust:
Provide fresh air. Do not inhale vapors or dust particles. Wear protective equipment.
- Environmental precautions: Do not allow to penetrate into soil, waterbodies or drains.
- Methods for clean-up: Take up mechanically, placing in appropriate containers for disposal.

7. Handling and storage

Handling

- Advices on safe handling: Make sure that the processing machines are well equipped with suction and ventilation systems.
If necessary: With the formation of dust, use a dust mask.
In case of development of vapors or dust:
Provide fresh air. Do not inhale vapors or dust particles. Wear protective equipment.
- Precautions against fire and explosion: Avoid open flames.
Take precautionary measures against static discharges.

Storage

- Requirements for storerooms and containers: Keep only in the original container. Keep container dry.
Protect from direct sunlight.
Keep at temperature not exceeding 50 °C.
- Hints on joint storage: Keep away from aromatic hydrocarbons.

8. Exposure controls / personal protection

Exposure guidelines

Occupational exposure limit values:

Type	Limit value
Canada: OEL 8 hour	10 mg/m ³ (Dust limit value, inhalable fraction)
Canada: OEL 8 hour	3 mg/m ³ (Dust limit value, respirable fraction)
Canada: OEL TWA	10 mg/m ³ (Dust limit value, inhalable fraction)
Canada: OEL TWA	3 mg/m ³ (Dust limit value, respirable fraction)
Canada: VEMP	10 mg/m ³ (total dust)
Canada: VEMP	3 mg/m ³ (total dust, respirable fraction)
USA: ACGIH: TWA	10 mg/m ³ (Dust limit value, inhalable fraction)
USA: ACGIH: TWA	3 mg/m ³ (Dust limit value, respirable fraction)
USA: OSHA: TWA	15 mg/m ³ (Dust limit value, total dust)
USA: OSHA: TWA	5 mg/m ³ (Dust limit value, respirable fraction)

Engineering controls

Provide for constant fresh air supply during and after processing.
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:	If necessary: Protective gloves against thermic risks. For machine processing: Protective gloves against mechanical risks. OSHA Standard - 29 CFR: 1910.138 Observe glove manufacturer's instructions concerning penetrability and breakthrough time.
Respiratory protection:	When vapors form: Use filter type A (= against vapors of organic substances) according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2. For mechanical processing: particulates filter OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2
General hygiene considerations:	The following shall be existing in the immediate working surrounding: emergency shower installed. Avoid generation of dust. Wash hands before breaks and after work. In case of warming: Do not breathe vapors.

Environmental exposure controls

Refer to 6.: Section "Environmental precautions".

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9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance:	Form: solid, plate Color: transparent, colorless
Odor:	weak characteristic
Odor threshold:	No data available
pH:	No data available
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	No data available
Flash point/flash point range:	No data available
Evaporation rate:	No data available
Flammability:	No data available
Explosion limits:	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Density:	1.01 g/cm ³
Water solubility:	insoluble
Partition coefficient: n-octanol/water:	No data available
Auto-ignition temperature:	No data available
Thermal decomposition:	> 350 °C
Ignition temperature:	> 400 °C (DIN 51594)
Additional information:	Softening temperature: 50 - 90 °C Processing temperature/Forming temperature: 170 °C / 338 °F

10. Stability and reactivity

Reactivity:	refer to section 10.3
Chemical stability:	Stable under recommended storage conditions. Maximum storage period (time) 3 year(s)
Possibility of hazardous reactions:	No dangerous reactions are known.
Conditions to avoid:	Avoid temperatures exceeding 170 °C / 338 °F °C. Protect from direct sunlight. Keep at temperature not exceeding 50 °C.
Incompatible materials:	Aromatic hydrocarbons
Hazardous decomposition products:	On heating or in case of fire toxic gases may form. Formation of styrene, 1,3-Butadiene, carbon monoxide and carbon dioxide.
Thermal decomposition:	> 350 °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: Lack of data.
- Serious eye damage/irritation: Lack of data.
- Sensitisation to the respiratory tract: Lack of data.
- Skin sensitisation: Lack of data.
- Germ cell mutagenicity/Genotoxicity: Lack of data.
- Carcinogenicity: Lack of data.
- Reproductive toxicity: Lack of data.
- 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.

Symptoms

In case of inhalation: In case of heating: risk of burns.
After contact with skin: In case of heating: risk of burns.
After eye contact: dust/vapors: mild irritant.

12. Ecological information

Ecotoxicity

Further details: No data available

Mobility in soil

No data available

Persistence and degradability

Further details: Product is not biodegradable.

Additional ecological information

Volatile organic compounds (VOC):

0 % by weight

General information:

Discharge into the environment must be avoided.

13. Disposal considerations

Product

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

Package

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

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

USA: Department of Transportation (DOT)

Proper shipping name: Not restricted

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

No data available

National regulations - U.S. Federal Regulations

This product is an article as defined by TSCA regulations, and is exempt from TSCA inventory listing requirements.

National regulations - U.S. State Regulations

No data available

16. Other information

Hazard rating systems:



NFPA Hazard Rating:

Health: 0 (Minimal)

Fire: 1 (Slight)

Reactivity: 0 (Minimal)

HMIS Version III Rating:

Health: 0 (Minimal)

Flammability: 1 (Slight)

Physical Hazard: 0 (Minimal)

Personal Protection: X = Consult your supervisor

HEALTH	0
FLAMMABILITY	1
PHYSICAL HAZARD	0
	X

Abbreviations and acronyms:

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
AS/NZS: Australian Standards/New Zealand Standards
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
EmS: Emergency Response Procedures for Ships Carrying Dangerous Goods
EN: European Standard
EQ: Excepted quantities
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
MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
OSHA: Occupational Safety and Health Administration
PBT: Persistent, bioaccumulative and toxic
PNEC: Predicted no-effect concentration
RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail
TRGS: Technical Rules for Hazardous Substances
TSCA: Toxic Substance Control Act
vPvB: Very persistent and very bioaccumulative
WHMIS: Workplace Hazardous Materials Information System

Literature:

At processing: See information supplied by the manufacturer.

Reason of change:

General revision

Date of first version:

30/5/2008

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.