

1. Product and company identification

Product identifier

Trade name: 640Z68=5 DIOSOL-19

Recommended use and restrictions on use

General use: Chemical reagent for orthopedic procedures

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: colorless

Odor: Odorless

Classification: Skin Corrosion 1A. Eye Damage 1. Aquatic toxicity - acute 2.
Aquatic toxicity - chronic 3.

Hazard symbols:



Signal word: **Danger**

Hazard statements: Causes severe skin burns and eye damage.
Toxic to aquatic life.
Harmful to aquatic life with long lasting effects.

Precautionary statements:

Do not breathe dust/fume/gas/mist/vapors/spray.
Wash hands and face thoroughly after handling.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection.
IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/or 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.
Immediately call a POISON CENTER/doctor.
Specific treatment (see 'First aid' on this label).
Wash contaminated clothing before reuse.
Store locked up.
Dispose of contents/container to hazardous or special waste collection point.

Regulatory status

This material is considered hazardous by the WHMIS in Canada.

Hazards not otherwise classified

Special danger of slipping by leaking/spilling product.
see section 11: Toxicological information

3. Composition / Information on ingredients

Chemical characterisation: Hydrogen peroxide, aqueous solution (stabilized)

Relevant ingredients:

CAS No.	Designation	Concentration	Classification
CAS 7722-84-1	Hydrogen peroxide	10 - < 20 %	Oxidizing Liquid 1. Acute Toxicity 4 (oral). Acute Toxicity 4 (inhalative). Skin Corrosion 1A. Eye Damage 1. Specific Target Organ Toxicity (Single Exposure) 3. Aquatic toxicity - acute 2. Aquatic toxicity - chronic 3.
CAS 7440-22-4	Silver	< 0.02 %	Aquatic toxicity - acute 1 (M-factor = 100). Aquatic toxicity - chronic 1 (M-factor = 100).

4. First aid measures

General information: If medical advice is needed, have product container or label at hand.

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

Following skin contact: Remove residues with water. 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. Seek the attention of an ophthalmologist immediately.

After swallowing: Rinse mouth immediately and drink plenty of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Seek medical attention.

Most important symptoms and effects, both acute and delayed

Causes severe skin burns and eye damage.

Information to physician

Treat symptomatically.

5. Fire fighting measures

Flash point/flash point range:

Not applicable

Auto-ignition temperature: Not self-igniting

Suitable extinguishing media:

Product is non-combustible. Extinguishing materials should therefore be selected according to surroundings.

Extinguishing media which must not be used for safety reasons:

Full water jet

Specific hazards arising from the chemical

Oxidizing effect due to oxygen generation. Important! Explosive decomposition is possible after the water has vaporized in extreme heat (e.g. close to fires). Fires in the immediate vicinity may cause the development of dangerous vapors.

Special protective equipment and precautions for fire-fighters:

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

Additional information:

Do not breathe fumes. Use fine water spray to cool endangered containers. 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 breathing mist/vapors/spray. Do not get in eyes, on skin, or on clothing. If possible, eliminate leakage. Provide adequate ventilation. Wear appropriate protective equipment. Take off contaminated clothing and wash it before reuse. Keep unprotected people away.

Environmental precautions:

Do not allow to enter into ground-water, surface water or drains. If necessary, notify appropriate authorities.

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. Apply neutralizing agents. Never return spills in original containers for re-use.

Additional information:

Special danger of slipping by leaking/spilling product.

7. Handling and storage

Handling

Advices on safe handling: Provide adequate ventilation, and local exhaust as needed. Avoid breathing mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Wear appropriate protective equipment. Take off contaminated clothing and wash it before reuse. Have eye wash bottle or eye rinse ready at work place. When handling large quantities, supply emergency spray.

Storage

Requirements for storerooms and containers:

Keep container tightly closed and in a well-ventilated place. Keep container dry. Keep only in original container.

Protect from heat and direct sunlight. Store containers in upright position.

Only approved packaging (e.g. in accordance with TDG) may be used.

Hints on joint storage:

Keep away from food, drink and animal feedingstuffs.

Do not store together with: Bases, reducing agents.

8. Exposure controls / personal protection

Exposure guidelines

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
7722-84-1	Hydrogen peroxide	Canada: OEL 8 hour	1.4 mg/m ³ ; 1 ppm
		Canada: OEL TWA	1 ppm
		Canada: VEMP	1 ppm
7440-22-4	Silver	Canada: OEL 8 hour	0.1 mg/m ³ (metal)
		Canada: OEL STEL	0.03 mg/m ³
			(Silver and compounds soluble calculated as Ag)
		Canada: OEL TWA	0.01 mg/m ³
			(Silver and compounds soluble calculated as Ag)
		Canada: VEMP	0.1 mg/m ³ (metal)

Engineering controls

Provide good ventilation and/or an exhaust system in the work area.

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.

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

Glove material:

Natural rubber (Caoutchouc) - Layer thickness: 0.4 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. In case of inadequate ventilation wear respiratory protection.
Recommendation: Use filter type CO [NO]-P3 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.

General hygiene considerations:
 Avoid breathing mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product.
 Wash hands thoroughly after handling. Take off contaminated clothing and wash it before reuse. Have eye wash bottle or eye rinse ready at work place. 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: colorless

Odor: Odorless

Odor threshold: No data available

pH: at 20 °C: 2 - 4

Melting point/freezing point: < 0 °C

Initial boiling point and boiling range: 100 °C

Flash point/flash point range: Not applicable

Evaporation rate: No data available

Flammability: Product is non-combustible.

Explosion limits: LEL (Lower Explosion Limit): Not applicable
 UEL (Upper Explosive Limit): Not applicable

Vapor pressure: at 20 °C: 23 hPa (water)

Vapor density: No data available

Density: at 20 °C: 1.0 - 1.2 g/mL

Water solubility: Completely miscible

Partition coefficient: n-octanol/water: at 20 °C: -1.57 log K(o/w) (Hydrogen peroxide)
 Based on the n-octanol/water partition coefficient accumulation in organisms is not expected.

Auto-ignition temperature: Not self-igniting

Thermal decomposition: Decomposes on heating.

Oxidizing characteristics: Oxidizing, not relevant for classification (according to Regulation (EC) No. 1272/2008 (CLP))

Ignition temperature: Not applicable

10. Stability and reactivity

Reactivity: Refer to subsection "Possibility of hazardous reactions".

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: Protect from heat and direct sunlight.

Incompatible materials: Bases, reducing agent

Hazardous decomposition products: No known hazardous decomposition products.

Thermal decomposition: Decomposes on heating.

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.

Acute toxicity (inhalative): Based on available data, the classification criteria are not met.
ATEmix (dust/mist, calculated): > 5 mg/L/4h

Skin corrosion/irritation: Skin Corrosion 1A = Causes severe skin burns and eye damage.

Serious eye damage/irritation: Eye Damage 1 = Causes serious eye damage.

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

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 Hydrogen peroxide (CAS 7722-84-1):
ATE, oral: 500 mg/kg
LD50 Rabbit, dermal: > 2,000 mg/kg
ATE, inhalative (dust/mist): 1.5 mg/L/4h

Symptoms

After contact with skin: Discolouration of the skin. Irritation and redness may occur.

After eye contact:
Upon direct contact with eyes may cause burning, tearing, redness. Prolonged eye contact may damage the cornea.

12. Ecological information

Ecotoxicity

Aquatic toxicity: Toxic to aquatic life with long lasting effects.
 Information about Hydrogen peroxide (CAS 7722-84-1):
 Fish toxicity:
 LC50 Pimephales promelas (fathead minnow): 16.4 mg/L/96h
 Daphnia toxicity:
 LC50 Daphnia pulex (water flea): 2.4 mg/L/48h
 NOEC Daphnia magna (Big water flea): 0.63 mg/L/21d
 Algae toxicity:
 ErC50 Skeletonema costatum 1.38 mg/L/72h
 NOEC Skeletonema costatum 0.63 mg/L/72h

Effects in sewage plants: Information about Hydrogen peroxide (CAS 7722-84-1):
 EC50 activated sludge: 466 mg/L/30min (OECD 209)

Mobility in soil

No adsorption in soil or sediment.

Persistence and degradability

Further details: Product is readily biodegradable.
 Biodegradability:
 Information about Hydrogen peroxide (CAS 7722-84-1):
 Oxygen consumption: > 99%/30min (OECD 209)

Additional ecological information

Volatile organic compounds (VOC):
 0 % by weight

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

13. Disposal considerations

Product

Recommendation: Dispose of waste according to applicable legislation. Do not allow product to reach sewage system.

Package

Recommendation: Dispose of waste according to applicable legislation. Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

14. Transport information

UN number

ADR/RID, IMDG, IATA-DGR:
 UN 2984

UN proper shipping name

ADR/RID, IMDG, IATA-DGR:
 UN 2984, HYDROGEN PEROXIDE, AQUEOUS SOLUTION

Transport hazard class(es)

ADR/RID: Class 5.1, Code: O1

IMDG: Class 5.1, Subrisk -

IATA-DGR: Class 5.1



Packing group

ADR/RID, IMDG, IATA-DGR:

III

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: UN2984
 Shipping name: UN 2984, hydrogen peroxide, aqueous solution
 TDG class: 5.1
 Packing group: III
 Explosive limit and limited quantity index: 5 L
 Passenger carrying road or rail index: 2.5 L

Sea transport (IMDG)

UN number: UN 2984
 Proper shipping name: UN 2984, HYDROGEN PEROXIDE, AQUEOUS SOLUTION
 Class or division, Subsidiary risk: Class 5.1, Subrisk -
 Packing Group: III
 EmS: F-H, S-Q
 Special Provisions: 65
 Limited quantities: 5 L
 Excepted quantities: E1
 Package - Instructions: P504
 Package - Provisions: -
 IBC - Instructions: IBC02
 IBC - Provisions: B5
 Tank instructions - IMO: -
 Tank instructions - UN: T4
 Tank instructions - Provisions: TP1, TP6, TP24
 Stowage and handling: Category B. SW1
 Segregation: SG16 SG59 SG72
 Properties and observations: Colourless liquid. Slowly decomposes, evolving oxygen; the rate of decomposition increases in contact with metals, except aluminium.
 Marine pollutant: no
 Segregation group: none

Air transport (IATA)

UN/ID number: UN 2984
 Proper shipping name: UN 2984, HYDROGEN PEROXIDE, AQUEOUS SOLUTION
 Class or division, Subsidiary risk: Class 5.1
 Packing Group: III
 Hazard label: Oxidizer
 Excepted Quantity Code: E1
 Passenger and Cargo Aircraft: Ltd.Qty.: Pack.Instr. Y541 - Max. Net Qty/Pkg. 1 L
 Passenger and Cargo Aircraft: Pack.Instr. 551 - Max. Net Qty/Pkg. 2.5 L
 Cargo Aircraft only: Pack.Instr. 555 - Max. Net Qty/Pkg. 30 L
 Special Provisions: A803
 Emergency Response Guide-Code (ERG): 5L

15. Regulatory information

National regulations - Canada

Hydrogen peroxide: DSL: listed
 Silver: DSL: listed

16. Other information

Text for labeling: Contains 10 - < 20 % Hydrogen peroxide, < 0.02 % Silver.

Hazard rating systems:



NFPA Hazard Rating:

Health: 2 (Moderate)
 Fire: 0 (Minimal)
 Reactivity: 1 (Slight)

HMIS Version III Rating:

Health: 2 (Moderate)
 Flammability: 0 (Minimal)
 Physical Hazard: 1 (Slight)

Personal Protection: X = Consult your supervisor

Classification procedure:

Physical hazards: on basis of test data
 Health hazards, environmental hazards: calculation method

HEALTH	2
FLAMMABILITY	0
PHYSICAL HAZARD	1
	X

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
 CAS: Chemical Abstracts Service
 CFR: Code of Federal Regulations
 CLP: Classification, Labelling and Packaging
 DMEL: Derived minimal effect level
 DNEL: Derived no-effect level
 DOT: Department of Transportation's Safety Regulations (USA)
 EC: European Community
 EC50: Effective Concentration 50%
 EmS: Emergency Response Procedures for Ships Carrying Dangerous Goods
 EN: European Standard
 EQ: Excepted quantities
 Eye Damage: Eye damage
 Eye Irritation: Eye irritation
 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%
 LEL: Lower Explosion Limit
 MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
 M-factor: Multiplication factor
 NOEC: No Observed Effect Concentration
 OECD: Organisation for Economic Co-operation and Development
 OEL: Occupational Exposure Limit Value
 OSHA: Occupational Safety and Health Administration
 Oxidizing Liquid: Oxidising liquids
 PBT: Persistent, bioaccumulative and toxic
 PNEC: Predicted no-effect concentration
 RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail
 Skin Corrosion: Skin corrosion
 Skin Irritation: Skin irritation
 STOT SE: Specific target organ toxicity - single exposure
 TDG: Transportation of Dangerous Goods Regulation in Canada
 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 2: Classification, labelling
 Changes in section 3: Composition/information on ingredients
 Changes in section 9: Physical and chemical properties
 General revision

Date of first version: 15/8/2025

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.