

1. Product and company identification

Product identifier

Trade name: 634A80 - SuperSkin Cleaner

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

General use: Solvents
For commercial user only

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
Department responsible for information:
Quality Department,
Telephone: +1 (801) 954-2304 (7 AM – 3 PM, Mountain Time),
Email: USRegulatory@ottobock.com

Additional information: Corporate headquarters:
Ottobock SE & Co. KGaA
Max-Näder-Straße 15
Duderstadt
Germany

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: Physical state at 68 °F and 101.3 kPa: liquid
Color: colorless
Odor: essential
Classification: Flammable Liquid - Category 2. Acute Toxicity - oral - Category 4. Eye Irritation - Category 2A. Carcinogenicity - Category 2.
Specific Target Organ Toxicity (Single Exposure) - Category 3.

Hazard symbols:



Signal word: **Danger**

Hazard statements:

- Highly flammable liquid and vapor.
- Harmful if swallowed.
- Causes serious eye irritation.
- May cause respiratory irritation.
- May cause drowsiness or dizziness.
- Suspected of causing cancer.

Precautionary statements:

- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- Avoid breathing mist/vapors/spray.
- Wear protective gloves/protective clothing/eye protection/face protection.
- Call a POISON CENTER/doctor if you feel unwell.
- In case of fire: Use dry powder, foam or water spray for extinction.
- Store in a well-ventilated place. Keep cool.
- 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).

Hazards not otherwise classified

Potentially explosive mixtures may form if adequate ventilation is not provided. May form explosive peroxides.
Special danger of slipping by leaking/spilling product.
see section 11: Toxicological information

3. Composition / Information on ingredients

Chemical characterization: $C_4H_8O = (CH_2)_3-CH_2O$
THF, Tetrahydrofurane

CAS-Number: 109-99-9

RTECS-Number: LU5950000

Additional information: Contains Inhibitor (3,5-Di-tert-butyl-4-hydroxytoluene, CAS 128-37-0: ≥ 200 ppm).

4. First aid measures

General information: First aider: Pay attention to self-protection! If medical advice is needed, have product container or label at hand. Take off contaminated clothing and wash it before reuse.

In case of inhalation: Move victim to fresh air, put at rest and loosen restrictive clothing. If victim is at risk of losing consciousness, position and transport on their side. If breathing becomes irregular or ceases, apply rescue breathing or artificial respiration immediately, where required supply oxygen. Seek medical attention.

Following skin contact: Thoroughly wash skin with soap and water. 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. Immediately get medical attention.

Most important symptoms/effects, acute and delayed

Causes serious eye irritation.

May cause respiratory irritation. May cause drowsiness or dizziness.

Harmful if swallowed.

Other symptoms: Shortage of breath, headache, dizziness, fever

Information to physician

Treat symptomatically.

5. Fire fighting measures

Flash point/flash point range:

-5.8 °F

Auto-ignition temperature: No data available

Suitable extinguishing media:

Water spray jet, alcohol resistant foam, dry chemical 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. Vapors form potentially explosive mixtures with air, which are heavier than air. Air-Vapor mixture may travel great distances at floor level and lead to backflash when exposed to an ignition source.

Furthermore, there may develop: Carbon monoxide and carbon dioxide.

Protective equipment and precautions for firefighters:

Wear self-contained positive pressure breathing apparatus and full firefighting 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. Avoid breathing mist/vapors/spray. Avoid contact with the substance. Eliminate all ignition sources if safe to do so. 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 drains, surface waters, basements or pits. Danger of explosion! If necessary, notify appropriate authorities.

Methods for clean-up:

Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see section 13).

Beware of reignition. Thoroughly clean surrounding area.

In case of greater quantities: Collect mechanically (use only explosion-proof equipment when pumping out). Never return spills in original containers for re-use.

Additional information: Use explosion-proof equipment and non-sparking tools/utensils.
Special danger of slipping by leaking/spilling product.

7. Handling and storage

Handling

Advices on safe handling: Obtain special instructions before use.
Provide adequate ventilation, and local exhaust as needed. Provide room air exhaust at ground level. Avoid breathing mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Wear appropriate protective equipment.
Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Take off contaminated clothing and wash it before reuse.
Guarantee sufficient ventilation during and after use, in order to prevent vapor accumulation.
Work place should be equipped with a shower and an eye rinsing apparatus.

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.
With air: May form explosive peroxides.

Storage

Requirements for storerooms and containers:
Keep container tightly closed and in a well-ventilated place.
Keep container dry. Keep only in the original container.
Protect from heat and direct sunlight.
Store containers in upright position.
Avoid: Access of air and oxygen (Peroxide formation!)

Hints on joint storage: Do not store together with: strong oxidizing agents, acids.
Keep away from food, drink and animal feedingstuffs.

8. Exposure controls / personal protection

Exposure guidelines

Occupational exposure limit values:

| Type | Limit value |
|------------------|--|
| USA: ACGIH: STEL | 295 mg/m ³ ; 100 ppm (may be absorbed through the skin) |
| USA: ACGIH: TWA | 147 mg/m ³ ; 50 ppm (may be absorbed through the skin) |
| USA: IDLH: TWA | 2,000 ppm [10% LEL] |
| USA: NIOSH: STEL | 735 mg/m ³ ; 250 ppm |
| USA: NIOSH: TWA | 590 mg/m ³ ; 200 ppm |
| USA: OSHA: TWA | 590 mg/m ³ ; 200 ppm |

Biological limit values:

| Type | Limit value | Parameter | Material | Time of sampling |
|----------------|-------------|-----------------|----------|---------------------------------|
| USA: ACGIH-BEI | 2 mg/L | Tetrahydrofuran | urine | end of exposure or end of shift |

Engineering controls

Provide good ventilation and/or an exhaust system in the work area. The substance should only be handled in closed apparatus or systems. 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:** Solvent-resistant protective clothing. In case of handling larger quantities: Flame-retardant protective clothing
protective gloves according to OSHA Standard - 29 CFR: 1910.138, solvent resistant
Glove material: polyethylene
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.
Unsuitable glove material: Fluororubber (Viton), nitrile rubber (latex), butyl caoutchouc (butyl rubber), PVC, natural rubber (Caoutchouc)
- Respiratory protection:** Respiratory protection must be worn whenever the TLV (WEL) levels have been exceeded. Use filter type A (= against vapors of organic substances) 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. If the concentration is exceeded, closed-circuit breathing apparatus must be used!
- General hygiene considerations:**
Obtain special instructions before use.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Avoid breathing mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Take off contaminated clothing and wash it before reuse.
Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Work place should be equipped with a shower and an eye rinsing apparatus.

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 68 °F and 101.3 kPa: liquid
Color: colorless
- Odor:** essential
- Odor threshold:** No data available
- pH:** 7
- Melting point/freezing point:** -163.3 °F
- Initial boiling point and boiling range:** 149.9 °F
- Flash point/flash point range:** -5.8 °F
- Evaporation rate:** No data available
- Flammability:** Highly flammable liquid and vapor.
- Explosion limits:** LEL (Lower Explosion Limit): 2.00 Vol-%
UEL (Upper Explosive Limit): 11.00 Vol-%
- Vapor pressure:** at 68 °F: 170 hPa

| | |
|---|---|
| Vapor density: | No data available |
| Density: | at 68 °F: 0.887 g/mL |
| Water solubility: | at 68 °F: completely miscible |
| Partition coefficient: n-octanol/water: | at 77 °F: 0.46 log K(o/w) (OECD 107) Based on the n-octanol/water partition coefficient accumulation in organisms is not expected. |
| Auto-ignition temperature: | No data available |
| Thermal decomposition: | Not determined |
| Explosive properties: | May form explosive peroxides. In use, may form flammable/explosive vapor-air mixture. |
| Ignition temperature: | 419 °F |
| Molecular weight | 72.12 g/mol |

10. Stability and reactivity

| | |
|-------------------------------------|--|
| Reactivity: | Highly flammable liquid and vapor. May form explosive peroxides. |
| Chemical stability: | Stable under recommended storage conditions. |
| Possibility of hazardous reactions: | In use, may form flammable/explosive vapor-air mixture. Heating will lead to pressure increase: Danger of bursting and explosion. |
| Conditions to avoid: | Protect from heat and direct sunlight. Due to the high vapor pressure, bursting danger to containers/vessels when temperature increases. Avoid shock and friction. |
| Incompatible materials: | Strong oxidizing agents, acids, oxygen, Air |
| Hazardous decomposition products: | No decomposition when used properly. |
| Thermal decomposition: | Not determined |

11. Toxicological information

Toxicological tests

| | | |
|-----------------|-------------------------------|--------------------------|
| Acute toxicity: | LD50 Rat, oral: | 1,650 mg/kg |
| | LD50 Rat, dermal: | > 2,000 mg/kg (OECD 402) |
| | LC50 Rat, inhalative (vapor): | > 14.7 mg/L/6h |

Toxicological effects:

Acute toxicity (oral): Acute Toxicity - oral - Category 4 = Harmful if swallowed.

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.

No mortality occurred

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

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

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: Carcinogenicity - Category 2 = Suspected of causing cancer.

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): Specific Target Organ Toxicity (Single Exposure) - Category 3 = May cause respiratory irritation. May cause drowsiness or dizziness.

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.

Symptoms

In case of inhalation:
Inhaling can lead to irritations of the respiratory tract and mucous membrane.
Higher doses may lead to a narcotic effect.

In case of ingestion:
Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

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

12. Ecological information

Ecotoxicity

Aquatic toxicity:

Fish toxicity:
LC50 Pimephales promelas (fathead minnow): 2,160 mg/L/96h
NOEC Pimephales promelas (fathead minnow): 216 mg/L/33d
LOEC Pimephales promelas (fathead minnow): 367 mg/L/33d

Daphnia toxicity:
LC50 Daphnia magna (Big water flea): 3,485 mg/L/48h

Algae toxicity:
NOEC Scenedesmus quadricauda: 3,700 mg/L/8d

Effects in sewage plants: IC50 activated sludge: 460 mg/L

Mobility in soil

No data available

Persistence and degradability

Further details: Biodegradability:
Oxygen consumption: 39%/28d (OECD 301 D)
Product is not readily biodegradable. Evidence for inherent biodegradability.

Additional ecological information

Volatile organic compounds (VOC):
100 % by weight
General information: Do not allow to enter into ground-water, surface water or drains.

13. Disposal considerations

Product

Recommendation: Incinerate according to applicable local, state and federal regulations.
Do not dispose of with household waste.

Package

Recommendation: Dispose of waste according to applicable legislation.
Recommended cleansing agent: Water
Handle contaminated packages in the same way as the substance itself.
Non-contaminated packages may be recycled.
Empty carefully and completely, if possible. Handle empty containers with care.
Incineration may cause explosion.

14. Transport information

UN number

ADR/RID, IMDG, IATA-DGR:
UN 2056

UN proper shipping name

ADR/RID, IMDG, IATA-DGR:
UN 2056, TETRAHYDROFURAN

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

USA: Department of Transportation (DOT)

Identification number: UN2056
 Proper shipping name: UN 2056, TETRAHYDROFURAN
 Hazard class or Division: 3
 Packing Group: II
 Labels: 3
 Special Provisions: IB2, T4, TP1
 Packaging – Exceptions: 150
 Packaging – Non-bulk: 202
 Packaging – Bulk: 242
 Quantity limitations – Passenger aircraft / rail: 5 L
 Quantity limitations – Cargo only: 60 L
 Vessel stowage – Location: B



Sea transport (IMDG)

UN number: UN 2056
 Proper shipping name: UN 2056, TETRAHYDROFURAN
 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 an ethereal odour. Flashpoint: below - 18°C c.c.
 Explosive limits: 1.5% to 12%. Miscible with water.
 Marine pollutant: no
 Segregation group: none

Air transport (IATA)

UN/ID number: UN 2056
 Proper shipping name: UN 2056, TETRAHYDROFURAN
 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): 3H

15. Regulatory information

National regulations - U.S. Federal Regulations

TSCA Inventory: listed
 Clean Air Act:
 CAA SOCM Chemical: yes
 Other Environmental Laws:
 CERCLA: RQ 1000 lbs.
 RCRA Hazardous Wastes: Code U213
 NIOSH Recommendations:
 Occupational Health Guideline: 0602

National regulations - U.S. State Regulations

Delaware Air Quality Management List:
 DRQ: 1000 - RQ State: Federal Regulations Apply
 Idaho Air Pollutant List:
 Title 585 - AAC: 29.5 - EL: 39.3 - WEL: 590 - Title 586 -
 Massachusetts Haz. Substance codes: 2,4,5,6 F8
 Minnesota Haz. Substance:
 Codes: AO, Ratings: -, Status: Title III.
 New York List of Hazardous Substances:
 RQ -- Air: 1000 - RQ -- Land: 100 - Note: No Note Associated with this chemical.
 Pennsylvania Haz. Substance code: E
 Washington Air Contaminant:
 TWA: 200 ppm / 590 mg - STEL: 250 ppm / 735 mg
 Delaware Air Quality Management List:
 DRQ: 1000 - RQ State: Federal Regulations Apply
 Idaho Air Pollutant List:
 Title 585 - AAC: 29.5 - EL: 39.3 - WEL: 590 - Title 586 -
 Massachusetts Haz. Substance codes: 2,4,5,6 F8
 Minnesota Haz. Substance:
 Codes: AO, Ratings: -, Status: Title III.
 New York List of Hazardous Substances:
 RQ -- Air: 1000 - RQ -- Land: 100 - Note: No Note Associated with this chemical.
 Pennsylvania Haz. Substance code: E
 Washington Air Contaminant:
 TWA: 200 ppm / 590 mg - STEL: 250 ppm / 735 mg

16. Other information

Text for labeling:

Hazard rating systems:



Contains 100 % Tetrahydrofuran.

NFPA Hazard Rating:

Health: 2 (Moderate)

Fire: 3 (Serious)

Reactivity: 1 (Slight)

HMIS Version III Rating:

Health: 2 (Moderate) - Chronic effects

Flammability: 3 (Serious)

Physical Hazard: 1 (Slight)

Personal Protection: X = Consult your supervisor

| | | |
|-----------------|---|---|
| HEALTH | * | 2 |
| FLAMMABILITY | | 3 |
| 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
 AS/NZS: Australian Standards/New Zealand Standards
 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
 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
 IC50: Inhibition Concentration 50%
 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
 OECD: Organisation for Economic Co-operation and Development
 OEL: Occupational Exposure Limit Value
 OSHA: Occupational Safety and Health Administration
 PBT: Persistent, bioaccumulative and toxic
 PNEC: Predicted no-effect concentration
 PVC: Polyvinyl chloride
 REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
 RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail
 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

Reason of change:

Changes in section 2: Labelling
 Changes in section 11: Toxicological information
 Changes in section 12: Ecological information
 Changes in section 15: Regulatory information
 General revision

Date of first version:

10/7/1994

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.