

1. Product and company identification

Product identifier

Trade name: 634A1 - Thinner and solvent

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

General use: Thinner and Solvent, 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

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: Form: liquid

Color: colorless

Odor: mild, pleasant ester odor

Classification: Flammable Liquid - Category 2; Eye Irritation - Category 2A;
Specific Target Organ Toxicity (Single Exposure) - Category 3;

Hazard symbols:



Signal word: **Danger**

Hazard statements: Highly flammable liquid and vapor.
Causes serious eye irritation.
May cause drowsiness or dizziness.

634A1 - Thinner and solvent

Material number 634A 1

Page: 2 of 10

Precautionary statements:

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 Avoid breathing vapors.
 Wear protective gloves and eye protection.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 Call a doctor if you feel unwell.
 Store in a well-ventilated place. Keep container tightly closed.

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

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.

see section 11: Toxicological information

3. Composition / Information on ingredients

Chemical characterization: C3 H6 O2 = CH3-COOCH3

Methyl acetate

CAS-Number: 79-20-9

RTECS-Number: AI9100000

4. First aid measures

In case of inhalation: Move victim to fresh air; if necessary, provide artificial respiration or oxygen. Seek medical attention. 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.
 On irritation of the respiratory system use an aerosol dispenser and treat with 5 doses of dexamethasone aerosol (e.g. Auxiloson, Thomae) every 10 minutes until symptoms cease.

Following skin contact: Wash affected skin with generous amount of water.
 Seek medical treatment in case of troubles.

After eye contact: Immediately flush eyes with plenty of flowing water for 5 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

After swallowing: Have victim drink large quantities of water, with active charcoal if possible. Immediately get medical attention.
 Attention in case of vomiting and stomach pumping: danger of aspiration. Accelerate intestinal transit. Finally with sodium sulfate additive.
 If victim is at risk of losing consciousness, position and transport on their side.
 Keep airway open. Keep victim resting calmly. Do not allow victim to become chilled.
 Keep victim warm.
 Castor oil and milk are contraindicated.

634A1 - Thinner and solvent

Material number 634A 1

Page: 3 of 10

Most important symptoms/effects, acute and delayed

May cause drowsiness or dizziness. Causes serious eye irritation. Repeated exposure may cause skin dryness or cracking.

The following symptoms may occur: Eye, nose, throat irritation, headache, at higher concentrations dizziness and nausea, unconsciousness and apnea.

Information to physician

Take measures to prevent pneumonia, infections and other symptoms, in particular acidity-alkalinity.

5. Fire fighting measures

Flash point/flash point range:

14 °F (c.c.)

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:

strong water jet

Specific hazards arising from the chemical

Highly flammable liquid and vapor. Liquid evaporates very quickly.

Product is not explosive. Vapors may form explosive mixtures with air.

Vapor and air form potentially explosive mixture that is hazardous to health. Mixture is heavier than air and will travel great distances at floor level and lead to backflash when exposed to an ignition source.

Heating will lead to pressure increase: Danger of bursting and explosion.

In case of fire may be liberated: 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:

Cool endangered containers with water spray and, if possible, remove from danger zone. Do not allow fire water to penetrate into surface or ground water.

6. Accidental release measures

Personal precautions:

Eliminate all ignition sources if safe to do so.

Avoid contact with the substance. Provide adequate ventilation.

Avoid breathing vapors.

Keep unprotected people away. Wear appropriate protective equipment.

Environmental precautions:

Do not allow to penetrate into soil, waterbodies or drains.

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.

In case of greater quantities: Collect mechanically (use only explosion-proof equipment when pumping out). Close all lower level rooms.

Final cleaning.

Additional information:

Use only non-sparking tools. Take precautionary measures against static discharges.

7. Handling and storage

Handling

Advices on safe handling: Provide good ventilation and/or an exhaust system in the work area.

Avoid breathing vapors. Avoid contact with skin and eyes.

Wear appropriate protective equipment.

Do not allow containers to stand open. Store product in a quantity adequate for 1 work-shift only.

Precautions against fire and explosion:

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Take precautionary measures against static discharges.

Use explosion-proof equipment and non-sparking tools/utensils.

Ground all containers and instruments. Use only explosion-protected equipment/instruments. Do not use air pressure to deliver.

Highly flammable liquid and vapor. Liquid evaporates very quickly.

Liquid evaporates very quickly. Vapor and air form potentially explosive mixture that is hazardous to health. Mixture is heavier than air and will travel great distances at floor level and lead to backflash when exposed to an ignition source.

Ignition by hot surfaces, sparks and open flames.

Storage

Requirements for storerooms and containers:

Keep container tightly closed in a cool, well-ventilated place.

Protect from heat and direct sunlight.

Keep container dry.

Hints on joint storage:

Do not store together with combustible materials or highly flammable solids.

keep away from: oxidizing agents Keep away from food, drink and animal feedingstuffs.

Further details:

Breakable containers may not exceed 2,2 liters. Maximum fill: 95 %

Unsuitable materials: various plastics, rubber.

8. Exposure controls / personal protection

Exposure guidelines

Occupational exposure limit values:

| Type | Limit value |
|------------------|---------------------------------|
| USA: ACGIH: STEL | 757 mg/m ³ ; 250 ppm |
| USA: ACGIH: TWA | 606 mg/m ³ ; 200 ppm |
| USA: NIOSH: STEL | 760 mg/m ³ ; 250 ppm |
| USA: NIOSH: TWA | 610 mg/m ³ ; 200 ppm |
| USA: OSHA: TWA | 610 mg/m ³ ; 200 ppm |

Engineering controls

Use only explosion-protected equipment/instruments.

Provide adequate ventilation, and local exhaust as needed.

Vent high concentrations of aerosols and/or fumes from the work area. Process exhaust through separator/filter as needed.

See also information in chapter 7, section storage.

634A1 - Thinner and solvent

Material number 634A 1

Page: 5 of 10

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. In case of handling larger quantities: Flame-resistant antistatic protective clothing Protective gloves according to OSHA Standard - 29 CFR: 1910.138. Glove material: butyl caoutchouc (butyl rubber) Breakthrough time: >240 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. Use filter against vapors of low boiling organic substances according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2. In case of prolonged or repeated exposures: use self-contained breathing apparatus. |
| General hygiene considerations: | Avoid breathing vapors. Avoid contact with skin and eyes. Keep away from food, drink and animal feedingstuffs. Take off immediately all contaminated clothing. Wash hands before breaks and after work. |

9. Physical and chemical properties

Information on basic physical and chemical properties

| | |
|--|---|
| Appearance: | Form: liquid Color: colorless |
| Odor: | mild, pleasant ester odor |
| Odor threshold: | No data available |
| pH value: | neutral |
| Melting point/freezing point: | -144.4 °F |
| Initial boiling point and boiling range: | 134.6 °F (DIN 53171) |
| Flash point/flash point range: | 14 °F (c.c.) |
| Evaporation rate: | No data available |
| Flammability: | No data available |
| Explosion limits: | LEL (Lower Explosion Limit): 3.10 Vol-% (literature value) UEL (Upper Explosive Limit): 16.00 Vol-% (literature value) |
| Vapor pressure: | at 68 °F: 220 hPa at 122 °F: 789 hPa |
| Vapor density: | No data available |
| Density: | at 68 °F: 0.934 g/mL |
| Solubility: | at 68 °F: various organic solvents |
| Water solubility: | at 68 °F: 250 g/L |
| Partition coefficient: n-octanol/water: | 0.18 log P(o/w) Based on the n-octanol/water partition coefficient accumulation in organisms is not expected. |
| Auto-ignition temperature: | No data available |
| Thermal decomposition: | At normal air pressure, the product may be distilled without decomposition. boiling temperature (3,5% water) azeotropic: 131 °F. |

634A1 - Thinner and solvent

Material number 634A 1

Page: 6 of 10

Viscosity, dynamic: at 68 °F: 0.381 mPa*s

Explosive properties: Product is not explosive. Vapors may form explosive mixtures with air.

Ignition temperature: 932 °F (DIN 51794)

Additional information: Odor threshold: 0,5 up to 616 mg/m³ = 0,002 ppm
 Molar mass: 74,08 g/mol
 Relative vapor density at 68 °F (air=1): 2,56
 Saturation concentration at 68 °F: 668g/m³
 Evaporation rate: 2,2

10. Stability and reactivity

Reactivity: Highly flammable liquid and vapor.

Chemical stability: Stable under recommended storage conditions.

Possibility of hazardous reactions
 Liquid evaporates very quickly. Product is not explosive. Vapors may form explosive mixtures with air. Vapor and air form potentially explosive mixture that is hazardous to health. Mixture is heavier than air and will travel great distances at floor level and lead to backflash when exposed to an ignition source.
 Ignition by hot surfaces, sparks and open flames.
 Heating will lead to pressure increase: Danger of bursting and explosion.

Conditions to avoid: Take precautionary measures against static discharges.
 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 Protect from moisture contamination.

Incompatible materials: Contact with water causes product to separate into acetic acid and methyl alcohol.
 Decomposition happens much faster in presence of acids and lyes.
 Exothermic reactions with strong oxidizing agents.

Hazardous decomposition products:
 With water: Acetic acid and Methyl alcohol.
 In case of fire may be liberated: carbon monoxide and carbon dioxide

Thermal decomposition: At normal air pressure, the product may be distilled without decomposition. boiling temperature (3,5% water) azeotropic: 131 °F.

11. Toxicological information

Toxicological tests

Acute toxicity: LD50 Rat, oral: 6970 mg/kg

634A1 - Thinner and solvent

Material number 634A 1

Page: 7 of 10

Toxicological effects:

- Acute toxicity (oral): Based on available data, the classification criteria are not met. LD50 Rat, oral: 6970 mg/kg
- Acute toxicity (dermal): Lack of data.
- Acute toxicity (inhalative): Lack of data.
- Skin corrosion/irritation: Lack of data.
- Serious eye damage/irritation: Eye Irritation - Category 2A = Causes serious eye irritation.
- 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): Specific Target Organ Toxicity (Single Exposure) - Category 3 = May cause drowsiness or dizziness.
- Specific target organ toxicity (repeated exposure): Lack of data.
- Aspiration hazard: Lack of data.

Other information: Methyl acetate is rapidly hydrolyzed into methanol and acetic acid which, especially over time, may result in a methanol poisoning. Estimated lethal dose: 30g

Symptoms

In case of inhalation:
 Eye, nose, throat irritation, headache, at higher concentrations dizziness and nausea, unconsciousness and apnea.
 Methyl acetate has a narcotic and depressive effect on the central nervous system especially in vapor form. Possible subsequent damage to the optical nerv.
 In severe cases, pneumonia or a pulmonary edema may develop.
 May cause irritations.
 A concentration that is hazardous to health occurs rapidly. Long exposure to vapor saturated air may cause serious damage with lasting side effects.
 After contact with skin: May cause irritations. Expect absorption through the skin.

12. Ecological information

Ecotoxicity

Aquatic toxicity: When mixed with water, forms byproducts that are hazardous to health. Especially in closed containers potentially explosive mixtures may form above water surface. Attention in stagnant and very slow flowing waters!
 Algae toxicity: IC50 : >120 mg/L/72h
 Bacterial toxicity:
 EC50 Photobacterium phosphoreum: 6100 mg/L/30min
 Daphnia toxicity:
 EC50 Daphnia magna: 1027 mg/L/48h
 Fish toxicity:
 LC50 Brachydanio rerio (zebra-fish): 250 - 350 mg/L/96h

Further details: Bio-accumulation is not to be expected (log P(o/w) <1).

634A1 - Thinner and solvent

Material number 634A 1

Mobility in soil

No data available

Persistence and degradability

Further details: No data available

Additional ecological information

Oxygen demand: CSB: 1,51 g/g

ThSB: 1,512 g/g

Volatile organic compounds (VOC):

100 % by weight = 934 g/L

General information: Do not allow to penetrate into soil, waterbodies or drains.

13. Disposal considerations

Product

Recommendation: Incinerate as hazardous waste according to applicable local, state, and federal regulations.
Do not empty into drains.

Contaminated packaging

Recommendation: Dispose of waste according to applicable legislation.

Additional information

Handle empty containers with care. Incineration may cause explosion.

14. Transport information

USA: Department of Transportation (DOT)

Identification number: UN1231
 Proper shipping name: UN 1231, UN 1231, METHYL ACETATE
 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



634A1 - Thinner and solvent

Material number 634A 1

Sea transport (IMDG)

UN number: UN 1231
 Proper shipping name: UN 1231, METHYL ACETATE
 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
 Contaminated packaging - Instructions: P001
 Contaminated packaging - 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, volatile liquid with a fragrant odour. Flashpoint: -10°C c.c.
 Explosive limits: 3% to 16%. Miscible with water.
 Marine pollutant: no
 Segregation group: none

Air transport (IATA)

UN/ID number: UN 1231
 Proper shipping name: UN 1231, METHYL ACETATE
 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; EPA flags T
 TSCA HPV: not listed
 TSCA: listed - Flags: T
 Clean Air Act Data: SOCM Chemical? Yes
 Clean Air Act:
 SOCMI Chemical: yes
 NIOSH Recommendations:
 Occupational Health Guideline: 0391*

634A1 - Thinner and solvent

Material number 634A 1

Page: 10 of 10

National regulations - U.S. State Regulations

California Prop 65 List: None
 Idaho Air Pollutant List:
 Title 585: AAC: 30.5 - EL: 40.7 - OEL: 610
 Massachusetts Haz. Substance codes: 2,4,5,6
 Minnesota Haz. Substance:
 Codes: AO - Ratings: -
 Pennsylvania Haz. Substance code: -
 Washington Air Contaminant:
 TWA: 200 ppm - 610 mg - STEL: 250 ppm - 760 mg

National regulations - Canada

DSL: listed

National regulations - Great Britain

Hazchem-Code: •2YE

16. Other information

Text for labeling: Contains 100 % Methyl acetate. Safety data sheet available on request.

Hazard rating systems:



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

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

| | |
|-----------------|---|
| HEALTH | 1 |
| FLAMMABILITY | 3 |
| PHYSICAL HAZARD | 0 |
| X | |

Literature: European Commission: Methyl Acetate, Risk Assessment Report, 2003

Reason of change: Changes in section 1.3: Corporate headquarters

Date of first version: 9/9/1994

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.