



SAFETY DATA SHEET

according to HCS 2024 (29 CFR 1910.1200)

634A31 - Thinner for Special Lacquer 635L2

Material number 634A31

Revision date: 3/2/2026
Version: 11.7
Replaces version: 11.6
Language: en-US
Date of print: 5/29/2026

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1. Identification

Product identifier

Trade name: 634A31 - Thinner for Special Lacquer 635L2

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

General use: 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
Zip 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 telephone 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. Hazard identification

Classification of the substance or mixture

Flammable Liquid - Category 2	Highly flammable liquid and vapor.
Skin Irritation - Category 2	Causes skin irritation.
Eye Irritation - Category 2	Causes serious eye irritation.
Reproductive toxicant - Category 2	Suspected of damaging the unborn child.
Specific Target Organ Toxicity (Single Exposure) - Category 3	May cause drowsiness or dizziness.
Specific Target Organ Toxicity (Repeated Exposure) - Category 2	May cause damage to organs through prolonged or repeated exposure.
Aspiration Toxicity - Category 1	May be fatal if swallowed and enters airways.
Aquatic toxicity - chronic - Category 2	Toxic to aquatic life with long lasting effects.

Label elements

Symbols:



Signal word:

Danger

Hazard statements:

Highly flammable liquid and vapor.
May be fatal if swallowed and enters airways.
Causes skin irritation.
Causes serious eye irritation.
May cause drowsiness or dizziness.
Suspected of damaging the unborn child.
May cause damage to organs through prolonged or repeated exposure.
Toxic to aquatic life with long lasting effects.

Precautionary statements:

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Do not breathe vapors.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.
Call a POISON CENTER/doctor/.../if you feel unwell.
Do NOT induce vomiting.
Collect spillage.
Store in a well-ventilated place. Keep container tightly closed.

3. Composition/information on ingredients**Mixtures**

Chemical characterization: Mixture of the substances listed below with non-hazardous additions

Relevant ingredients:

CAS No.	Designation	Concentration	Classification
CAS 67-64-1	Acetone	25 - 50 %	Flammable Liquid - Category 2. Eye Irritation - Category 2A. Specific Target Organ Toxicity (Single Exposure) - Category 3.
CAS 142-82-5	n-Heptane	10 - 25 %	Flammable Liquid - Category 2. Skin Irritation - Category 2. Specific Target Organ Toxicity (Single Exposure) - Category 3. Aspiration Toxicity - Category 1. Aquatic toxicity - acute - Category 1. Aquatic toxicity - chronic - Category 1.
CAS 123-86-4	n-Butyl acetate	10 - 25 %	Flammable Liquid - Category 3. Specific Target Organ Toxicity (Single Exposure) - Category 3.
CAS 108-88-3	Toluene	10 - 25 %	Flammable Liquid - Category 2. Skin Irritation - Category 2. Reproductive toxicant - Category 2. Specific Target Organ Toxicity (Single Exposure) - Category 3. Specific Target Organ Toxicity (Repeated Exposure) - Category 2. Aspiration Toxicity - Category 1.
CAS 67-63-0	Isopropyl alcohol	2.5 - 10 %	Flammable Liquid - Category 2. Eye Irritation - Category 2A. Specific Target Organ Toxicity (Single Exposure) - Category 3.

The actual concentration or concentration range is withheld as a trade secret.

4. First aid measures

In case of inhalation:	Provide fresh air. If victim is at risk of losing consciousness, position and transport on their side. Seek medical treatment in case of troubles.
Following skin contact:	Immediately clean with water and soap followed by thorough rinsing. Seek medical treatment in case of troubles.
After eye contact:	Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.
After swallowing:	Do not induce vomiting. Keep victim calm and seek medical attention immediately.

Most important symptoms/effects, acute and delayed

In case of inhalation:

Harmful: danger of serious damage to health by prolonged exposure through inhalation. Inhalation of vapors exceeding the allowable WEL/TLV-levels may pose a health hazard as well as lead to irritation of mucous membranes and respiratory system, cause kidney and liver damage as well as adversely affect the central nervous system.

symptoms:

Headache, dizziness, fatigue, muscle weakness, numbing effect and, in exceptional cases, unconsciousness.

In case of ingestion: Harmful: may cause lung damage if swallowed.

After contact with skin: irritant

Prolonged or repeated contact with the product affects the skin's natural oils and induces drying up.

The product can be absorbed through skin.

After eye contact: irritant

Information to physician

Treat symptomatically.

5. Fire-fighting measures

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:

In case of fire, use Carbon dioxide, sand or dry chemical powder. Never use water.

Extinguishing media which must not be used for safety reasons:

Full water jet

Specific hazards arising from the chemical

Exposure to fire produces thick, black smoke that is hazardous to health.

Protective equipment and precautions for firefighters

Wear self-contained breathing apparatus.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear appropriate protective equipment. Keep unprotected people away.

Do not breathe vapors.

Provide adequate ventilation.

Environmental precautions:

Do not allow to enter soil, sewage, water bodies, lower level rooms or pits.

Methods and material for containment and cleaning up

Methods for clean-up:

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

Provide adequate ventilation.

Do not remove residual product with water and detergent.



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7. Handling and storage

Precautions for safe handling

Advices on safe handling: Provide good ventilation and/or an exhaust system in the work area.
Avoid the formation of aerosol.
Avoid contact with the substance.
Do not breathe vapors.

Precautions against fire and explosion:

Keep away from sources of ignition - No smoking.
Take precautionary measures against static discharges.

Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:

Store in well closed containers in a cool, dry, well-ventilated area.

Hints on joint storage:

Keep away from strong acids and bases as well as oxidizing agents.

8. Exposure controls/personal protection

Control parameters

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
67-64-1	Acetone	USA: ACGIH: STEL	500 ppm
		USA: ACGIH: TWA	250 ppm
		USA: IDLH: TWA	2,500 ppm
		USA: NIOSH: TWA	590 mg/m ³ ; 250 ppm
		USA: OSHA: TWA	2,400 mg/m ³ ; 1,000 ppm
142-82-5	n-Heptane	USA: IDLH: TWA	750 ppm
		USA: NIOSH: Ceiling	1,800 mg/m ³ ; 440 ppm
		USA: NIOSH: TWA	350 mg/m ³ ; 85 ppm
		USA: OSHA: TWA	2,000 mg/m ³ ; 500 ppm
123-86-4	n-Butyl acetate	USA: ACGIH: STEL	150 ppm
		USA: ACGIH: TWA	50 ppm
		USA: IDLH: TWA	1,700 ppm
		USA: NIOSH: STEL	950 mg/m ³ ; 200 ppm
		USA: NIOSH: TWA	710 mg/m ³ ; 150 ppm
		USA: OSHA: TWA	710 mg/m ³ ; 150 ppm
108-88-3	Toluene	USA: ACGIH: TWA	20 ppm
		USA: IDLH: TWA	500 ppm
		USA: NIOSH: STEL	560 mg/m ³ ; 150 ppm
		USA: NIOSH: TWA	375 mg/m ³ ; 100 ppm
		USA: OSHA: Ceiling	500 ppm
		USA: OSHA: STEL	300 ppm
67-63-0	Isopropyl alcohol	USA: OSHA: TWA	200 ppm
		USA: ACGIH: STEL	984 mg/m ³ ; 400 ppm
		USA: ACGIH: TWA	492 mg/m ³ ; 200 ppm
		USA: IDLH: TWA	2,000 ppm [10% LEL]
		USA: NIOSH: STEL	1,225 mg/m ³ ; 500 ppm
		USA: NIOSH: TWA	980 mg/m ³ ; 400 ppm
		USA: OSHA: TWA	980 mg/m ³ ; 400 ppm

Biological limit values:

CAS No.	Designation	Type	Limit value	Parameter	Sampling
67-64-1	Acetone	USA: ACGIH-BEI, urine	25 mg/L	acetone	end of exposure or end of shift
142-82-5	n-Heptane	USA: ACGIH-BEI, urine	140 µg/L	2,5 Heptanedione	end of exposure or end of shift
108-88-3	Toluene	USA: ACGIH-BEI, blood	0.02 mg/L	Toluene in blood	Prior to last shift of workweek
		USA: ACGIH-BEI, urine	0.03 mg/L	Toluene in urine	end of exposure or end of shift
		USA: ACGIH-BEI, urine	0.3 mg/g creatinine	o-Cresol in urine	end of exposure or end of shift
67-63-0	Isopropyl alcohol	USA: ACGIH-BEI, urine	40 mg/L	Acetone in urine	end of shift at end of work week

Appropriate engineering controls

Use only explosion-protected equipment/instruments.
Provide good ventilation and/or an exhaust system in the work area.

Personal protection equipment (PPE)

Respiratory protection: Respiratory protection must be worn whenever the TLV (WEL) levels have been exceeded. Use filter type AX (= against vapors of low boiling organic substances) according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2.

Hand protection: Protective gloves according to OSHA Standard - 29 CFR: 1910.138. Glove material: Neoprene or nitrile rubber-breakthrough time: > 480 min. Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection: Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010

General hygiene considerations:
Keep away from food, drink and animal feedingstuffs.
Take off immediately all contaminated clothing.
Wash hands before breaks and after work.
Avoid contact with skin and eyes.
Do not breathe vapors.

Environmental exposure controls

Refer to 6.: Section "Environmental precautions".

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state at 68 °F and 101.3 kPa: liquid
Color: colorless
Odor: characteristic
Odor threshold: No data available

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Melting point/freezing point:	No data available
Initial boiling point and boiling range:	131 °F
Flammability:	No data available
Explosion limits:	LEL (Lower Explosion Limit): 1.10 Vol-% UEL (Upper Explosive Limit): 13.00 Vol-%
Flash point/flash point range:	-2.2 °F
Evaporation rate:	No data available
Auto-ignition temperature:	not self-igniting
Decomposition temperature:	No data available
pH:	No data available
Viscosity, kinematic:	at 68 °F: kinematic 11 s (DIN 53211/4)
Water solubility:	at 68 °F: slightly miscible
Partition coefficient: n-octanol/water:	No data available
Vapor pressure:	at 68 °F: 233 hPa at 122 °F: (Acetone) 800 hPa
Density:	at 68 °F: 0.797 g/mL
Vapor density:	No data available
Particle characteristics:	Not applicable

Additional information

Explosive properties:	Product is not explosive. Potentially explosive vapor/air mixtures may form.
Ignition temperature:	419 °F
Solvent content:	100 %

10. Stability and reactivity

Reactivity:	Highly flammable liquid and vapor.
Chemical stability:	Product is stable under normal storage conditions.
Possibility of hazardous reactions:	Vapors may form explosive mixtures with air.
Conditions to avoid:	Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges.
Incompatible materials:	Strong acid or bases as well as oxidizing agents.
Hazardous decomposition products:	In case of fire may be liberated: carbon monoxide and carbon dioxide.

11. Toxicological information

Information on toxicological effects

Toxicological effects:	Acute toxicity (oral): Lack of data.
	Acute toxicity (dermal): Lack of data.
	Acute toxicity (inhalative): Lack of data.
	Skin corrosion/irritation: Skin Irritation - Category 2 = Causes skin irritation.
	Serious eye damage/irritation: Eye Irritation - Category 2 = 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: Reproductive toxicant - Category 2 = Suspected of damaging the unborn child.
	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): Specific Target Organ Toxicity (Repeated Exposure) - Category 2 = May cause damage to organs through prolonged or repeated exposure.
	Aspiration hazard: Aspiration Toxicity - Category 1 = May be fatal if swallowed and enters airways.
Other information:	Possible risk of harm to the unborn child.

Symptoms

In case of inhalation:
Harmful: danger of serious damage to health by prolonged exposure through inhalation. Inhalation of vapors exceeding the allowable WEL/TLV-levels may pose a health hazard as well as lead to irritation of mucous membranes and respiratory system, cause kidney and liver damage as well as adversely affect the central nervous system.
symptoms:
Headache, dizziness, fatigue, muscle weakness, numbing effect and, in exceptional cases, unconsciousness.
In case of ingestion: Harmful: may cause lung damage if swallowed.
After contact with skin: irritant
Prolonged or repeated contact with the product affects the skin's natural oils and induces drying up.
The product can be absorbed through skin.
After eye contact: irritant

12. Ecological information

Ecotoxicity

Aquatic toxicity:	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
	Avoid spills and leaks. Very small amounts contaminates drinking water.

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Persistence and degradability

Further details: No data available

Bioaccumulative potential

Partition coefficient: n-octanol/water:

No data available

Mobility in soil

No data available

Other adverse effects

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

13. Disposal considerations**Waste treatment methods****Product**

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

Package

Recommendation: Dispose of waste according to applicable legislation.

14. Transport information**UN number**

DOT: UN1993

IMDG, IATA-DGR: UN 1993

UN proper shipping name

DOT: UN 1993, FLAMMABLE LIQUIDS, N.O.S. (Acetone, Heptane, Toluene, Isopropyl alcohol)

IMDG, IATA-DGR: UN 1993, FLAMMABLE LIQUID, N.O.S. (Acetone, Heptane, Toluene, Isopropyl alcohol)

Transport hazard class(es)

DOT: 3

IMDG: Class 3, Subrisk -

IATA-DGR: Class 3

**Packing group**

DOT, IMDG, IATA-DGR: II

Environmental hazards

Marine pollutant: yes

Transport in bulk according to IMO instruments

No data available

Special precautions for user

USA: Department of Transportation (DOT)

Labels:	3
Symbols:	G
Special Provisions:	IB2, T7, TP1, TP8, TP28
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)

EmS:	F-E, S-E
Special Provisions:	274
Limited quantities:	1 L
Excepted quantities:	E2
Package - Instructions:	P001
Package - Provisions:	-
IBC - Instructions:	IBC02
IBC - Provisions:	-
Tank instructions - IMO:	-
Tank instructions - UN:	T7
Tank instructions - Provisions:	TP1, TP8, TP28
Stowage and handling:	Category B.
Properties and observations:	-
Marine pollutant:	yes
Segregation group:	none

Air transport (IATA)

Proper shipping name:	UN 1993, FLAMMABLE LIQUID, N.O.S. (Acetone, Heptane, Toluene, Isopropyl alcohol)
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
Special Provisions:	A3
Emergency Response Guide-Code (ERG):	3H

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15. Regulatory information

National regulations - U.S. Federal Regulations

Acetone:	<p>TSCA Inventory: listed</p> <p>Clean Air Act:</p> <p>CAA SOCM Chemical: yes</p> <p>Other Environmental Laws:</p> <p>CERCLA: RQ 5000 lbs.</p> <p>RCRA Groundwater Monitoring: listed</p> <p>NIOSH Recommendations:</p> <p>Occupational Health Guideline: 0004*</p>
n-Heptane:	<p>TSCA Inventory: listed</p> <p>NIOSH Recommendations:</p> <p>Occupational Health Guideline: 0312</p>
n-Butyl acetate:	<p>TSCA Inventory: listed</p> <p>Clean Water Act:</p> <p>CWA Hazardous Substances: Category D; RQ 5000.0 lbs</p> <p>Other Environmental Laws:</p> <p>CERCLA: RQ 5000 lbs.</p> <p>NIOSH Recommendations:</p> <p>Occupational Health Guideline: 0072</p>
Toluene:	<p>TSCA Inventory: listed</p> <p>Carcinogen Status: IARC Rating: Group 3</p> <p>OSHA Carcinogen: not listed</p> <p>NTP Rating: not listed</p> <p>Clean Air Act:</p> <p>CAA Hazardous Air Pollutants: yes</p> <p>CAA SOCM Chemical: yes</p> <p>Clean Water Act:</p> <p>CWA Hazardous Substances: Category C; RQ 1000.0 lbs</p> <p>CWA Priority Pollutants: listed</p> <p>Other Environmental Laws:</p> <p>CERCLA: RQ 1000 lbs.</p> <p>RCRA Hazardous Wastes: Waste Code U220</p> <p>RCRA Groundwater Monitoring: listed</p> <p>SARA Title III, Section 313, Toxic Release: NPFAS; De Minimis <=1.0 %;</p> <p>Thresholds 25000/10000 lbs</p> <p>NIOSH Recommendations:</p> <p>Occupational Health Guideline: 0619</p>

Isopropyl alcohol:

TSCA Inventory: listed

Carcinogen Status: IARC Rating: Group 3

OSHA Carcinogen: not listed

NTP Rating: not listed

Other Environmental Laws:

SARA Title III, Section 313, Toxic Release: NPFAS; De Minimis <=1.0 %;
Thresholds 25000/10000 lbs

NIOSH Recommendations:

Occupational Health Guideline: 0359

National regulations - U.S. State Regulations

Acetone:

New York Right-To-Know: listed

n-Butyl acetate:

New York Right-To-Know: listed

Toluene:

California Proposition 65:
developmental

New York Right-To-Know: listed

Further regulations, limitations and legal requirements

No data available

16. Other information

Text for labeling:

Contains 25 - 50 % Acetone, 10 - 25 % n-Heptane, 10 - 25 % n-Butyl acetate, 10 - 25 % Toluene, 2.5 - 10 % Isopropyl alcohol.

Hazard components for labelling: contains Acetone, Heptane, n-Butyl acetate, Toluene, Isopropyl alcohol,

Revision date:

3/2/2026

Date of first version:

10/8/1994

Reason of change:

Changes in section 8: Biological Limit Value

Hazard rating systems:

NFPA Hazard Rating:

Health: 2 (Moderate)

Fire: 3 (Serious)

Reactivity: 0 (Minimal)

HMIS Version III Rating:

Health: 2 (Moderate)

Flammability: 3 (Serious)

Physical Hazard: 0 (Minimal)

Personal Protection: X = Consult your supervisor



HEALTH	2
FLAMMABILITY	3
PHYSICAL HAZARD	0
	X

Abbreviations and acronyms:

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
Aspiration Toxicity: Aspiration toxicity
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
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
IMDG Code: International Maritime Dangerous Goods Code
IMO: International Maritime Organization
LEL: Lower Explosion Limit
MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
OEL: Occupational Exposure Limit Value
OSHA: Occupational Safety and Health Administration
PBT: Persistent, bioaccumulative and toxic
PNEC: Predicted no-effect concentration
Reproductive toxicant: Reproductive toxicity
Skin Irritation: Skin irritation
STOT RE: Specific target organ toxicity - repeated exposure
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

Literature: ;

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.