

**1. Product and company identification**

**Product identifier**

Trade name: 634A20 - Thinner for 636W17

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

General use: Solvent  
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, clear  
Odor: sweet, aromatic  
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.

Precautionary statements:

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
 Take precautionary measures against static discharge.  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 Store in a well-ventilated place. Keep container tightly closed.  
 Store locked up.  
 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) and SIMDUT in Canada.

**Hazards not otherwise classified**

Vapors are moderately irritating to the mucous membranes.  
 Higher doses may have a narcotic effect. Danger of metabolic acidosis.  
 After ingestion: Gastric and intestinal problems.  
 Other symptoms: Headache, dizziness, nausea, unconsciousness.  
 see section 11: Toxicological information

**3. Composition / Information on ingredients**

Chemical characterization: C3 H6 O = H3C-CO-CH3  
 Acetone, Dimethyl ketone, 2-Propanone, Methyl ketone  
 CAS-Number: 67-64-1  
 RTECS-Number: AL3150000

**4. First aid measures**

General information: Move victim to fresh air, put at rest and loosen restrictive clothing. Do not allow victim to become chilled. Keep victim warm.  
 If victim is at risk of losing consciousness, position and transport on their side. Call a physician immediately.

In case of inhalation: Move victim to fresh air, put at rest and loosen restrictive clothing.  
 If breathing becomes irregular or ceases, apply rescue breathing or artificial respiration immediately, where required supply oxygen. Immediately get medical attention.

Following skin contact: Immediately remove any wetted clothing, shoes or stockings. After contact with skin, wash immediately with soap and plenty of water. Follow up by applying skin cream.  
 In case of skin irritation, consult a physician.

After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently seek the immediate attention of an ophthalmologist.

After swallowing: If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.  
 Give activated carbon, in order to reduce the resorption in the gastro-enteric tract.

**Most important symptoms/effects, acute and delayed**

Burning eyes and skin. fatigue, nausea, Headache, dizziness, unconsciousness.

In case of inhalation:

For the development of any overt signs of toxicity in humans, accidental exposures to extremely large amounts of acetone by inhalation of vapour or ingestion of liquid are necessary (e. g. several thousand ppm of acetone vapour).

In case of ingestion: Gastric and intestinal problems.

After contact with skin:

Irritant. Repeated exposure may cause skin dryness or cracking, due to defatting properties.

No indication for sensitising properties in humans.

After eye contact: Causes serious eye irritation.

**Information to physician**

Combat acidosis. Monitor alkali reserves. Monitor breathing.

If breathing becomes irregular or ceases, apply rescue breathing or artificial respiration immediately, where required supply oxygen.

Attention: several hours latency period. In severe cases, pneumonia or a pulmonary edema may develop.

**5. Fire fighting measures**

Flash point/flash point range:

1.4 °F (c.c.)

Auto-ignition temperature: 869 °F (Inflammation group G1)

Suitable extinguishing media:

Dry chemical powder, alcohol resistant foam, carbon dioxide, water spray jet

Extinguishing media which must not be used for safety reasons:

Full water jet

**Specific hazards arising from the chemical**

Highly flammable liquid and vapor.

Explosive mixtures with air may even form at room temperature. Beware of reignition.

In case of fire may be liberated: Carbon monoxide and carbon dioxide.

Protective equipment and precautions for firefighters:

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

Additional information:

Heating will lead to pressure increase: Danger of bursting and explosion. Cool exposed containers with water spray.

Move undamaged containers from immediate hazard area if it can be done safely.

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.

Fire class: B

Mixtures with 4% acetone mixed with 96% water still have a flash point of 129.2 °F.

**6. Accidental release measures**

Personal precautions:

Eliminate all ignition sources if safe to do so. Remove persons not involved upwind.

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

Solvent-resistant protective clothing recommended.

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## Environmental precautions:

Plug leak if safely possible.  
Do not allow to enter drains, surface waters, basements or pits.  
When released into the environment, alert police and fire brigade.  
Seal all low level rooms. Danger of explosion!

## Methods for clean-up:

In case of spills of large quantities: Dam spills and pump to remove. Explosion protection required.  
Absorb leftover product with non-flammable liquid-binding material (e.g. earth, sand, vermiculite or ground sand stone) and place in closed containers for disposal.  
Flowing water: Dilution occurs quickly. In case of large spills/leaks inform appropriate local, state, and federal spill reporting authorities.  
Standing water: Seal off. Remove all sources of ignition.

## Additional information:

Vapors spread at floor level. Cover drainage holes and evacuate basement. Dilute with plenty of water. Use only explosion-protected equipment/instruments.  
Liquid: Very highly flammable. Liquid evaporates very quickly.  
Vapors: Very highly flammable.  
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. Ignition by hot surfaces, sparks and open flames.  
Solubility in water: complete  
Mixtures with 4% acetone mixed with 96% water still have a flash point of 129.2 °F. In case of important spills, risk of ignition of the acetone-water mixture. Potentially explosive mixtures with air may form above water surface.

## 7. Handling and storage

### Handling

## Advices on safe handling:

Provide adequate ventilation, and local exhaust as needed.  
Provide room air exhaust at ground level. Concentrated vapors are heavier than air.  
Avoid the formation of aerosol. Do not breathe vapors. Avoid contact with skin and eyes.  
Wear appropriate protective equipment.  
Use only explosion-protected equipment/instruments. Do not use air pressure.

## Precautions against fire and explosion:

Exposure to temperatures exceeding 122 °F will increase pressure: resulting in danger of bursting or explosion.  
Keep away from sources of ignition - No smoking.  
Take precautionary measures against static discharges. Beware of reignition.  
Potentially explosive mixture may form within partially empty containers.  
Emergency cooling must be provided for in case of a fire in the vicinity.  
Do not weld.

## Specific use(s)

Solvent

### Storage

## Requirements for storerooms and containers:

Keep container dry. Keep container tightly closed in a cool, well-ventilated place. Protect from direct sunlight.  
Steel, stainless steel, and aluminium are stable container materials. Copper may be attacked.  
Unsuitable container/equipment material: May attack plastics.  
Make sure spills can be contained, e.g. in sump pallets or kerbed areas.

Hints on joint storage: Do not store together with combustibile or self-igniting materials or any highly flammable solids.  
 Peroxide may form when product is exposed to light and air.

Further details: Potentially explosive mixture may form within partially empty containers.  
 For outdoor storage: Use only equipment approved for use in 1 zone.  
 For indoor storage: Use only equipment approved for use in 2 zone.

**8. Exposure controls / personal protection**

**Exposure guidelines**

Occupational exposure limit values:

Type	Limit value
USA: ACGIH: STEL	500 ppm
USA: ACGIH: TWA	250 ppm
USA: NIOSH: TWA	590 mg/m <sup>3</sup> ; 250 ppm
USA: OSHA: TWA	2400 mg/m <sup>3</sup> ; 1000 ppm

Biological limit values:

Type	Limit value	Parameter	Material	Time of sampling
USA: ACGIH-BEI	25 mg/L	acetone	urine	end of exposure or end of shift

**Engineering controls**

Explosion protection required. 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: Use solvent-resistant protective clothing.  
 Recommendation: Flame-retardant protective clothing, antistatic.  
 safety shoes according to EN 345-347.  
 Protective gloves according to OSHA Standard - 29 CFR: 1910.138.  
 Glove material: Butyl caoutchouc (butyl rubber) - Layer thickness >= 0.5 mm.  
 Breakthrough time: >480 min.  
 Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Respiratory protection: Use filter against vapors of low boiling organic substances according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2.  
 Have a breathing apparatus that is not dependent on the circulating air ready for emergencies.

General hygiene considerations:  
 Keep away from heat sources, sparks and open flames. Take precautionary measures against static discharges.  
 Avoid contact with skin and eyes.  
 When using do not eat, drink or smoke.  
 Wash hands before breaks and after work.  
 Have eye wash bottle or eye rinse ready at work place.

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

Appearance:	Form: liquid Color: colorless, clear
Odor:	sweet, aromatic
Odor threshold:	47.5 mg/m <sup>3</sup>
pH value:	at 10 g/L: neutral; 50% in H <sub>2</sub> O: 5-6
Melting point/freezing point:	-138.46 °F
Initial boiling point and boiling range:	132.89 °F
Flash point/flash point range:	1.4 °F (c.c.)
Evaporation rate:	No data available
Flammability:	Highly flammable liquid and vapor.
Explosion limits:	LEL (Lower Explosion Limit): 2.50 Vol-% UEL (Upper Explosive Limit): 14.30 Vol-%
Vapor pressure:	at 68 °F: 240 hPa at 122 °F: 800 hPa
Vapor density:	2.1
Density:	at 68 °F: 0.79 g/mL
Solubility:	at 68 °F: in organic solvents 100 %
Water solubility:	at 68 °F: multimiscible
Partition coefficient: n-octanol/water:	-0.24 log P(o/w) Based on the n-octanol/water partition coefficient accumulation in organisms is not expected.
Auto-ignition temperature:	869 °F (Inflammation group G1)
Thermal decomposition:	none
Viscosity, dynamic:	at 68 °F: 0.32 mPa*s
Explosive properties:	Explosion category 1; Explosion group II A
Oxidizing characteristics:	Highly flammable liquid and vapor.
Ignition temperature:	869 °F (Inflammation group G1)
Refraction index:	at 68 °F: 1.358 - 1.359
Additional information:	Molar mass: 58.09 g/mol Dissociation constant: pKa = 24.2 at 25°C Evaporation rate: 2.0 (ether = 1) Evaporation rate: 5.6 (n-BuAc = 1) Saturation concentration at 68 °F: 550 g/m <sup>3</sup>

## 10. Stability and reactivity

Reactivity:	Acetone reacts in presence of bases. 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. May become electrostatically charged.
Chemical stability:	Product is stable under normal storage conditions.
Possibility of hazardous reactions	No hazardous reactions known.

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Conditions to avoid: Highly flammable. Concentrated vapors are heavier than air.  
Take precautionary measures against static discharges.  
Forms explosive mixtures with air, also in empty, uncleaned containers.  
May produce, when being mixed with chloridized hydrocarbons and exposed to light, strongly irritating chloric acetone.

Incompatible materials: Attacks many plastics and rubbers. On contact with barium hydroxide, sodium hydroxide and many other alkaline materials condensation may occur.  
Avoid contact with strong oxidizing agents, alkalis and amines.

Hazardous decomposition products:  
In case of fire may be liberated: Carbon monoxide and carbon dioxide.

Thermal decomposition: none

## 11. Toxicological information

### Toxicological tests

Acute toxicity: LD50 Rat, oral: 5800 mg/kg bw (OECD 401)  
LD50 Rat, dermal: > 15800 mg/kg bw  
LC50 Rat, inhalative: 76 mg/L/4h

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**Toxicological effects:**

Acute toxicity (oral): Based on available data, the classification criteria are not met.

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.

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

Specific symptoms in animal studies (guinea pig): Does not cause irritation.

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

Specific symptoms in animal studies (Rabbit): irritant (OECD 405)

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.

Sensitisation: Specific symptoms in animal studies (guinea pig): not sensitising (OECD 406)

Germ cell mutagenicity/Genotoxicity: Based on available data, the classification criteria are not met.

not mutagenic in bacterial mutagenicity (OECD 471 )

Chromosomal aberrations, in-vitro (OECD 473): negative

Gene-mutations mammalian cells, in-vitro (OECD 476): negative

Micronucleus test in-vivo Mouse/hamster (non-Guideline): negative

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

Not carcinogen at long term exposure (Mouse, dermal).

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

Effects on fertility: No impairment of reproductive performance in animal experiments.

developmental toxicity: None developmental toxicity (inhalation at Rat, Mouse, OECD 414).

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. May cause drowsiness or dizziness.

Specific target organ toxicity (repeated exposure): Based on available data, the classification criteria are not met.

NOAEL Rat, oral: 900 mg/kg/90d bw/d

NOAEC Rat, inhalative: 22500 mg/m<sup>3</sup>/8w

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

**Other information:**

Short term effect: 10000 ppm were well-tolerated.

No symptoms did appear after 30 to 60 minutes.

### Symptoms

Burning eyes and skin. fatigue, nausea, Headache, dizziness, unconsciousness.

In case of inhalation:

For the development of any overt signs of toxicity in humans, accidental exposures to extremely large amounts of acetone by inhalation of vapour or ingestion of liquid are necessary (e. g. several thousand ppm of acetone vapour).

In case of ingestion: Gastric and intestinal problems.

After contact with skin:

Irritant. Repeated exposure may cause skin dryness or cracking, due to defatting properties.

No indication for sensitising properties in humans.

After eye contact: Causes serious eye irritation.



## 12. Ecological information

### Ecotoxicity

Aquatic toxicity: **Acute effects:**  
**Fish toxicity:**  
 - freshwater species: 96h LC50 (Oncorhynchus mykiss): 5,540 mg/L  
 - marine species: 96h LC50 (Alburnus alburnus (alburnum)): 11,000 mg/L  
**Invertebrate toxicity:**  
 - freshwater species: 48h EC50 (Daphnia pulex (water flea)): 8,800 mg/L  
 - marine species: 24h EC50 (Artemisia salina): 2,100 mg/l  
**Algae toxicity:**  
 - freshwater species: 8h NOEC (Microcystis aeruginosa): 530 mg/L/8 d.  
 - marine species: 96h NOEC (Prorocentrum minimum): 430 mg/L  
**Bacterial toxicity:**  
 EC 12: (30 min; activated sludge; OECD 209): 1,000 mg/L  
**Long-term effects:**  
 Long-term toxicity to aquatic invertebrates:  
 28-days NOEC (Daphnia pulex (water flea); reproduction: 2,212 mg/L  
 No information on long-term effects of fish and algae available.  
 Long-term effects on aquatic organisms are not relevant due to the rapid elimination in water.

Effects in sewage plants: In activated sludge: 100 %/ 4 d (anaerobic conditions; Warburg Respirometer)

### Mobility in soil

Adsorption coefficient soil (Kd) : 1.5 L/kg, at 20 °C.  
 The soil sorption coefficient indicates that acetone is mobile in soil and may be transported by soil water.  
**Volatility:**  
 Henry constant: 2.929 - 3.070 Pa\*m<sup>3</sup>/mol (25 °C water).  
 Henry constant: 3.311 Pa\*m<sup>3</sup>/mol (25 °C marine water).  
 Experimentally determined Henry's Law constants indicate a moderate volatility from water.

### Persistence and degradability

Further details: **Abiotic degradation:**  
 DT50, 19 - 114 d (Air, Indirect photodegradation by reaction with OH radicals.)  
 Abiotic degradation: none (Water, hydrolysis)  
**Biodegradation:** 91 %/28 d (OECD 301B).  
 ThOD 84 %/5 d. (BOD5, APHA 219).  
 COD: 2.21 g O<sub>2</sub>/g  
 Product is readily biodegradable.

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**Additional ecological information**

Volatile organic compounds (VOC):

100 % by weight = 790 g/L

General information:

Terrestrial toxicity:

48h LD50 (*Eisenia fetida*): 0.1 - 1 mg/cm<sup>3</sup>

48h LD50 (*Ambystoma mexicanum*): 20,000 mg/L

48h LD50 (*Xenopus laevis*): 24,000 mg/L

In a study conducted according to OECD Guideline 207 (Earthworm, Acute Toxicity Tests: filter paper contact test), acetone showed a moderate toxicity to *Eisenia fetida*. In further short term toxicity studies, *Ambystoma mexicanum* and *Xenopus laevis* larvae exposed to acetone under static conditions in covered glass basins showed 48h LC50 values of 20,000 mg/L and 24,000 mg/L, respectively.

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

**13. Disposal considerations**

**Product**

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

**Contaminated packaging**

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

**14. Transport information**

**USA: Department of Transportation (DOT)**

Identification number: UN1090  
 Proper shipping name: UN 1090, UN 1090, Acetone  
 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



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**Sea transport (IMDG)**

UN number: UN 1090  
 Proper shipping name: UN 1090, ACETONE  
 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 E.  
 Properties and observations: Colourless, clear liquid, with a characteristic mint-like odour. Flashpoint: -20°C to -18°C c.c. Explosive limits: 2.5% to 13%. Miscible with water.  
 Marine pollutant: no  
 Segregation group: none

**Air transport (IATA)**

UN/ID number: UN 1090  
 Proper shipping name: UN 1090, ACETONE  
 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  
 TSCA HPVC: not listed  
 Clean Air Act:  
 SOCM Chemical: yes  
 Other Environmental Laws:  
 CERCLA: RQ 5000 lbs.  
 RCRA Hazardous Wastes: Code U002  
 RCRA Groundwater Monitoring: Methods 8240 / PQL 100  
 NIOSH Recommendations:  
 Occupational Health Guideline: 0004\*

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### National regulations - U.S. State Regulations

California Prop 65 List: None  
 Delaware Air Quality Management List:  
 DRQ: 5000 - RQ State: Federal Regulations Apply  
 Idaho Air Pollutant List:  
 Title 585: AAC: 89 - EL: 119 - OEL: 1780  
 Massachusetts Haz. Substance codes: 2,4,5,6 F8 F9  
 Minnesota Haz. Substance:  
 Codes: AON - Ratings: 7.16 - Status: Title III  
 New York List of Hazardous Substances:  
 RQ-Air: 5000 - RQ-Land: 1 - Note: No Note Associated with this chemical.  
 Pennsylvania Haz. Substance code: E  
 Washington Air Contaminant:  
 TWA: 750 ppm - 1800 mg - STEL: 1000 ppm - 2400 mg

### National regulations - Canada

DSL: listed  
 CAS 67-64-1 is listed on Canada's DSL and Ingredient Disclosure Lists.  
 Classification: B2, D2B

### National regulations - Great Britain

Hazchem-Code: •2YE

## 16. Other information

Text for labeling: Contains 100 % Acetone. 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

JT Baker Storage Color Code: Red (Flammable Hazard)

Literature: REACH Registration Dossier Acetone. P&D-REACH Consortium, 2010.  
 ICSC 0087

Reason of change: Changes in section 1.3: Corporate headquarters  
 Date of first version: 9/6/1989

### 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.