

1. Product and company identification

Product identifier

Trade name: SL=P078 - Urethane Bonding Kit

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

General use: Adhesive, for orthopedic procedures.
For use in industrial installations and professional treatment 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

Odor: Nearly odorless

Classification: Acute Toxicity - oral - Category 4. Acute Toxicity - inhalative - Category 3.
Skin Irritation - Category 2. Eye Irritation - Category 2A. Respiratory Sensitizer -
Category 1. Sensitization - skin - Category 1.
Specific Target Organ Toxicity (Repeated Exposure) - Category 2.
Aquatic toxicity - chronic - Category 2.

Hazard symbols:



Signal word: **Danger**

Hazard statements:

- Harmful if swallowed.
- Causes skin irritation.
- May cause an allergic skin reaction.
- Causes serious eye irritation.
- Toxic if inhaled.
- May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- May cause damage to organs through prolonged or repeated exposure.
- Toxic 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.
- Do not eat, drink or smoke when using this product.
- Use only outdoors or in a well-ventilated area.
- Contaminated work clothing should not be allowed out of the workplace.
- Avoid release to the environment.
- Wear protective gloves/protective clothing/eye protection/face protection.
- In case of inadequate ventilation wear respiratory protection.
- IF SWALLOWED: Immediately call a POISON CENTER/doctor.
- IF ON SKIN: Wash with plenty of water/soap.
- 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.
- Call a POISON CENTER/doctor.
- Specific treatment (see 'First aid' on this label).
- Rinse mouth.
- If skin irritation or rash occurs: Get medical advice/attention.
- If eye irritation persists: Get medical advice/attention.
- If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
- Take off contaminated clothing and wash it before reuse.
- Collect spillage.
- 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).

Hazards not otherwise classified

Special danger of slipping by leaking/spilling product.
Pre-existing skin and respiratory conditions including dermatitis, asthma and chronic lung disease might be aggravated by exposure.
see section 11: Toxicological information

3. Composition / Information on ingredients

Relevant ingredients:

| CAS No. | Designation | Concentration | Classification |
|----------------|---|---------------|---|
| CAS 25322-69-4 | Polypropylene glycol | 20 - 25 % | Acute Toxicity - oral - Category 4. |
| CAS 5124-30-1 | Dicyclohexylmethan-4,4' diisocyanate | 10 - 15 % | Acute Toxicity - inhalative - Category 3. Skin Irritation - Category 2. Eye Irritation - Category 2A. Respiratory Sensitizer - Category 1. Sensitization - skin - Category 1. Specific Target Organ Toxicity (Single Exposure) - Category 3. |
| CAS 68479-98-1 | Diethylmethylbenzenediamine | < 10 % | Acute Toxicity - oral - Category 4. Acute Toxicity - dermal - Category 4. Eye Irritation - Category 2A. Specific Target Organ Toxicity (Repeated Exposure) - Category 2. Aquatic toxicity - acute - Category 1. Aquatic toxicity - chronic - Category 1. |
| CAS 78-93-3 | Butanone | < 10 % | Flammable Liquid - Category 2. Eye Irritation - Category 2A. Specific Target Organ Toxicity (Single Exposure) - Category 3. |
| CAS 3147-75-9 | 2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol | < 1 % | not classified |
| CAS 41556-26-7 | Bis(1,2,2,6,6-pentamethyl-4-piperidyl)sebacate | < 1 % | Sensitization - skin - Category 1A. Aquatic toxicity - acute - Category 1 (M-factor = 1). Aquatic toxicity - chronic - Category 1 (M-factor = 1). |
| CAS 82919-37-7 | Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate | < 1 % | Sensitization - skin - Category 1. Aquatic toxicity - acute - Category 1. Aquatic toxicity - chronic - Category 1. |

4. First aid measures

| | |
|-------------------------|--|
| General information: | 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: | If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately get medical attention. |
| Following skin contact: | Immediately clean with water and soap followed by thorough rinsing. 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. Do not induce vomiting.
Do not give milk or alcoholic beverages. Seek medical attention.

Most important symptoms/effects, acute and delayed

Toxic if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Harmful if swallowed. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation.

Information to physician

Treat symptomatically.

5. Fire fighting measures

Flash point/flash point range:

No data available

Auto-ignition temperature:

No data available

Suitable extinguishing media:

water spray jet, alcohol resistant foam, carbon dioxide

Extinguishing media which must not be used for safety reasons:

Full water jet

Specific hazards arising from the chemical

In case of fire may be liberated: nitrogen oxides (NO_x), isocyanates, carbon monoxide and carbon dioxide.

Protective equipment and precautions for firefighters:

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

Additional information:

Use fine water spray to cool endangered containers.

In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Do not allow water used to extinguish fire to enter drains, ground or waterways.

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:

Do not breathe mist/vapors/spray. Avoid contact with the substance.

If possible, eliminate leakage. Provide adequate ventilation.

Wear appropriate protective equipment. Keep unprotected people away.

Take off contaminated clothing and wash it before reuse.

Environmental precautions:

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

If necessary, notify appropriate authorities.

Methods for clean-up:

Soak up with absorbent materials such as sand, siliceous earth, acid- or universal binder.

Store in special closed containers and dispose of according to ordinance.

Collect in closed containers for disposal.

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. Do not breathe 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.
Have eye wash bottle or eye rinse ready at work place.

Precautions against fire and explosion:

Reacts with water, forming carbon monoxide, producing bursting hazard in closed containers due to build-up of pressure.

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.

Hints on joint storage:

Keep away from food, drink and animal feedingstuffs.

8. Exposure controls / personal protection

Exposure guidelines

Occupational exposure limit values:

| CAS No. | Designation | Type | Limit value |
|-----------|--------------------------------------|---------------------|-------------------------------------|
| 5124-30-1 | Dicyclohexylmethan-4,4'-diisocyanate | USA: ACGIH: TWA | 0.054 mg/m ³ ; 0.005 ppm |
| | | USA: NIOSH: Ceiling | 0.11 mg/m ³ ; 0.01 ppm |
| 78-93-3 | Butanone | USA: ACGIH: STEL | 885 mg/m ³ ; 300 ppm |
| | | USA: ACGIH: TWA | 590 mg/m ³ ; 200 ppm |
| | | USA: IDLH: TWA | 3,000 ppm |
| | | USA: NIOSH: STEL | 885 mg/m ³ ; 300 ppm |
| | | USA: NIOSH: TWA | 590 mg/m ³ ; 200 ppm |
| | | USA: OSHA: TWA | 590 mg/m ³ ; 200 ppm |

Biological limit values:

| CAS No. | Designation | Type | Limit value | Parameter | Sampling |
|---------|-------------|-----------------------|-------------|-----------|---------------------------------|
| 78-93-3 | Butanone | USA: ACGIH-BEI, urine | 2 mg/L | MEK | end of exposure or end of shift |

Engineering controls

Provide for good ventilation or exhaust system or work with completely self-contained equipment.
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 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. Recommended 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, self-contained breathing apparatus must be used. |
| General hygiene considerations: | Do not breathe 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. Have eye wash bottle or eye rinse ready at work place. |

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 |
| Odor: | Nearly odorless |
| Odor threshold: | No data available |
| pH: | No data available |
| Melting point/freezing point: | No data available |
| Initial boiling point and boiling range: | No data available |
| Flash point/flash point range: | No data available |
| Evaporation rate: | No data available |
| Flammability: | No data available |
| Explosion limits: | No data available |
| Vapor pressure: | No data available |
| Vapor density: | No data available |
| Density: | No data available |
| Solubility: | No data available |
| Partition coefficient: n-octanol/water: | No data available |
| Auto-ignition temperature: | No data available |
| Thermal decomposition: | No data available |
| Additional information: | No data available |

10. Stability and reactivity

| | |
|---------------------|---|
| Reactivity: | Refer to subsection "Possibility of hazardous reactions". |
| Chemical stability: | Stable under recommended storage conditions. |

Possibility of hazardous reactions:

Reacts with water, forming carbon dioxide, producing bursting hazard in closed containers due to build-up of pressure.

Conditions to avoid:

Protect from heat and direct sunlight.
Protect from moisture contamination.

Incompatible materials:

Water, oxidizing agents, strong acids

Thermal decomposition:

No data available

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

ATEmix (calculated: 300 mg/kg < ATE ≤ 2,000 mg/kg

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

ATEmix (calculated: > 2,000 mg/kg

Acute toxicity (inhalative): Acute Toxicity - inhalative - Category 3 = Toxic if inhaled.

Skin corrosion/irritation: Skin Irritation - Category 2 = Causes skin irritation.

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

Sensitisation to the respiratory tract: Respiratory Sensitizer -

Category 1 = May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin sensitisation: Sensitization - skin - Category 1 = May cause an allergic skin reaction.

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): Lack of data.

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: Lack of data.

Symptoms

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

12. Ecological information

Ecotoxicity

Aquatic toxicity:

Toxic to aquatic life with long lasting effects.

Mobility in soil

No data available

Persistence and degradability

Further details: No data available

Additional ecological information

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.

Package

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

14. Transport information

UN number

ADR/RID, IMDG, IATA-DGR:

UN 2206

UN proper shipping name

ADR/RID, IMDG, IATA-DGR:

UN 2206, ISOCYANATES, TOXIC, N.O.S. (Dicyclohexylmethan-4,4' diisocyanate)

Transport hazard class(es)

ADR/RID:

Class 6.1, Code: T1

IMDG:

Class 6.1, Subrisk -

IATA-DGR:

Class 6.1

Packing group

ADR/RID, IMDG:

III

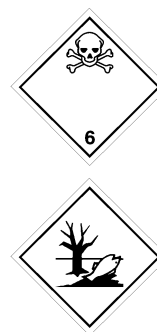
IATA-DGR:

II

Environmental hazards

Marine pollutant:

yes



Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No data available

SAFETY DATA SHEET

according to 29 CFR 1910.1200 and ANSI standard Z400.1-2010

SL=P078 - Urethane Bonding Kit

Material number SL=P078

Revision date: 1/2/2023

Version: 5.1

Replaces version: 5.0

Language: en-US

Date of print: 9/2/2025

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USA: Department of Transportation (DOT)

Identification number: UN2206
 Proper shipping name: UN 2206,
 ISOCYANATES, TOXIC, N.O.S. or ISOCYANATE
 SOLUTIONS, TOXIC, N.O.S.
 (Dicyclohexylmethan-4,4' diisocyanate)
 Hazard class or Division: 6.1
 Packing Group: III
 Labels: 6.1
 Symbols: G
 Special Provisions: IB3, T7, TP1, TP13, TP28
 Packaging – Exceptions: 153
 Packaging – Non-bulk: 203
 Packaging – Bulk: 241
 Quantity limitations – Passenger aircraft / rail:
 60 L
 Quantity limitations – Cargo only: 220 L
 Vessel stowage – Location: E
 Vessel stowage – Other: 25, 40



Sea transport (IMDG)

UN number: UN 2206
 Proper shipping name: UN 2206, ISOCYANATES, TOXIC, N.O.S.
 (Dicyclohexylmethan-4,4' diisocyanate)
 Class or division, Subsidiary risk: Class 6.1, Subrisk -
 Packing Group: III
 EmS: F-A, S-A
 Special Provisions: 223 274
 Limited quantities: 5 L
 Excepted quantities: E1
 Package - Instructions: P001, LP01
 Package - Provisions: -
 IBC - Instructions: IBC03
 IBC - Provisions: -
 Tank instructions - IMO: -
 Tank instructions - UN: T7
 Tank instructions - Provisions: TP1, TP13, TP28
 Stowage and handling: Category E. SW1 SW2
 Properties and observations: Liquids with a pungent odour. Immiscible with water but reacts with it to form carbon dioxide. Toxic if swallowed, by skin contact or by inhalation. If under deck, with mechanical ventilation, six air charges per hour, except when carried in closed containers, when two air changes per hour are required. Irritating to skin, eyes and mucous membranes.
 Marine pollutant: yes
 Segregation group: none

Air transport (IATA)

| | |
|---|---|
| UN/ID number: | UN 2206 |
| Proper shipping name:: | UN 2206, ISOCYANATES, TOXIC, N.O.S. (Dicyclohexylmethan-4,4' diisocyanate) |
| Class or division, Subsidiary risk: | Class 6.1 |
| Packing Group: | II |
| Hazard label: | Toxic |
| Excepted Quantity Code: | E4 |
| Passenger and Cargo Aircraft: Ltd.Qty.: | Pack.Instr. Y641 - Max. Net Qty/Pkg. 1 L |
| Passenger and Cargo Aircraft: | Pack.Instr. 654 - Max. Net Qty/Pkg. 5 L |
| Cargo Aircraft only: | Pack.Instr. 662 - Max. Net Qty/Pkg. 60 L |
| Special Provisions: | A3 |
| Emergency Response Guide-Code (ERG): | 6L |

15. Regulatory information

National regulations - U.S. Federal Regulations

| | |
|--|---|
| Polypropylene glycol: | TSCA Inventory: listed |
| Dicyclohexylmethan-4,4' diisocyanate: | TSCA Inventory: listed |
| | NIOSH Recommendations: Occupational Health Guideline: 0412 |
| Diethylmethylenbenzenediamine: | TSCA Inventory: listed |
| Butanone: | TSCA Inventory: listed |
| | Other Environmental Laws: CERCLA: RQ 5000 lbs. RCRA Hazardous Wastes: Code U159 RCRA Groundwater Monitoring: Methods 8015, 8240 / PQL 10, 100 |
| | NIOSH Recommendations: Occupational Health Guideline: 0069* |
| 2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol: | TSCA Inventory: listed |
| Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate: | TSCA Inventory: listed |
| Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate: | TSCA Inventory: listed |

National regulations - U.S. State Regulations

Butanone:

Delaware Air Quality Management List:

DRQ: 5000 - RQ State: Federal Regulations Apply

Idaho Air Pollutant List: Title 585/Title 586: -

Massachusetts Haz. Substance codes: 2,4,5,6 F8 F9

Minnesota Haz. Substance:

Codes: ANO - Ratings: 9.7 - Status: Air Pollutant Title III. TRI.

New Jersey RTK Hazardous Substance:

DOT: 1193 - Sub No.: 1258 - TPQ: -

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: 200 ppm - 590 mg - STEL: 300 ppm - 885 mg

2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol:

EPCRA

· Section 302 (extremely hazardous substances): Substance is not listed.

· Section 313 (Specific toxic chemical listings): Substance is not listed.

CAA 112(r) Regulated Chemicals For Accidental Release Prevention:

Substance is not listed.

16. Other information

Text for labeling:

Contains 20 - 25 % Polypropylene glycol, 10 - 15 % Dicyclohexylmethan-4,4'-diisocyanate, < 10 % Diethylmethylbenzenediamine, < 10 % Butanone, < 1 % 2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol, < 1 % Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate, < 1 % Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate. Safety data sheet available on request.

As from 24 August 2023 adequate training is required before industrial or professional use.

Hazard rating systems:



NFPA Hazard Rating:

Health: 3 (Serious)

Fire: 1 (Slight)

Reactivity: 0 (Minimal)

HMIS Version III Rating:

Health: 3 (Serious) - Chronic effects

Flammability: 1 (Slight)

Physical Hazard: 0 (Minimal)

Personal Protection: X = Consult your supervisor

| | | |
|-----------------|---|---|
| HEALTH | * | 3 |
| FLAMMABILITY | | 1 |
| PHYSICAL HAZARD | | 0 |
| | | 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
 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
 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
 MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
 M-factor: Multiplication factor
 MFSU: Manufacture, formulation, supply and use
 OEL: Occupational Exposure Limit Value
 OSHA: Occupational Safety and Health Administration
 PBT: Persistent, bioaccumulative and toxic
 PNEC: Predicted no-effect concentration
 REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
 Respiratory Sensitizer: Sensitisation to the respiratory tract
 RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail
 Sensitization - skin: Skin sensitisation
 Skin Irritation: Skin irritation
 STOT RE: Specific target organ toxicity - repeated exposure
 STOT SE: Specific target organ toxicity - single exposure
 SVHC: Substance of very high concern
 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 14: IATA-DGR 2023
General revision

Date of first version: 6/30/2015

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.