

SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

Sodium perborate tetrahydrate

| | | | |
|---------------|---------------------|---------|-----|
| Creation date | 20th September 2019 | Version | 3.0 |
| Revision date | 12th December 2024 | | |

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

| | |
|----------------------|---|
| Substance / mixture | Sodium perborate tetrahydrate substance |
| Chemical name | perboric acid (HBO(O ₂)), sodium salt, tetrahydrate |
| CAS number | 37244-98-7 |
| Index number | 005-018-01-X |
| EC (EINECS) number | 234-390-0 |
| Registration number | 01-2119516039-43-XXXX |
| Other substance name | Sodium perborate tetrahydrate |

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

Substance's intended use

Chemical production, analytical chemistry, laboratory synthesis, industrial applications. Manufacture of detergents and cleaning products.

Substance uses advised against

The product should not be used in ways other than those referred in Section 1.

1.3. Details of the supplier of the safety data sheet

Supplier

| | |
|-----------------------------|--|
| Name or trade name | Ing. Petr Švec - PENTA s.r.o. |
| Address | Radiová 1122/1, Praha 10, 102 00 Czech Republic |
| Identification number (CRN) | 02096013 |
| VAT Reg No | CZ02096013 |
| Phone | +420 226 060 681 |
| E-mail | info@pentachemicals.eu |
| Web address | www.pentachemicals.eu |

Competent person responsible for the safety data sheet

| | |
|--------|-------------------------------|
| Name | Ing. Petr Švec - PENTA s.r.o. |
| E-mail | info@pentachemicals.eu |

1.4. Emergency telephone number

European emergency number: 112 112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification of the substance in accordance with Regulation (EC) No 1272/2008

The substance is classified as dangerous.

Eye Dam. 1, H318
Acute Tox. 4, H332
STOT SE 3, H335
Repr. 1B, H360Df

Most serious adverse effects on human health and the environment

Causes serious eye damage. May cause respiratory irritation. Harmful if inhaled. May damage the unborn child. Suspected of damaging fertility.

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2.2. Label elements

Hazard pictogram



Signal word

Danger

Dangerous substance

perboric acid (HBO(O₂)), sodium salt, tetrahydrate
(Index: 005-018-01-X; CAS: 37244-98-7)

Hazard statements

| | |
|--------|---|
| H318 | Causes serious eye damage. |
| H332 | Harmful if inhaled. |
| H335 | May cause respiratory irritation. |
| H360Df | May damage the unborn child. Suspected of damaging fertility. |

Precautionary statements

| | |
|----------------|--|
| P280 | Wear eye protection. |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P310 | Immediately call a doctor. |

Supplemental information

Restricted to professional users.

2.3. Other hazards

The substance does not have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605. Substance does not meet the criteria for PBT or vPvB in accordance with Annex XIII of Regulation (EC) No. 1907/2006 (REACH) as amended. Does not contain any PMT or vPvM components. Dust may form explosive mixture with air.

SECTION 3: Composition/information on ingredients

3.1. Substances

Chemical characterization

The substance specified below.

| Identification numbers | Substance name | Content in % weight | Classification according to Regulation (EC) No 1272/2008 | Note |
|--|--|---------------------|---|------|
| Index: 005-018-01-X CAS: 37244-98-7 EC: 234-390-0 Registration number: 01-2119516039-43-XXXX | substance main component perboric acid (HBO(O ₂)), sodium salt, tetrahydrate | >95 | Eye Dam. 1, H318 Acute Tox. 4, H332 STOT SE 3, H335 Repr. 1B, H360Df Specific concentration limit: Repr. 1B, H360Df: C ≥ 14 % Repr. 1B, H360D: 10 % ≤ C < 14 % Eye Dam. 1, H318: C ≥ 36 % Eye Irrit. 2, H319: 22 % ≤ C < 36 % | 1 |

Notes

1 The use of the substance is restricted by Annex XVII of REACH Regulation

Full text of all classifications and hazard statements is given in the section 16.

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SECTION 4: First aid measures

4.1. Description of first aid measures

Take care of your own safety. If any health problems are manifested or if in doubt, inform a doctor and show him information from this safety data sheet. If unconscious, put the person in the stabilized (recovery) position on his side with his head slightly bent backwards and make sure that airways are free; never induce vomiting. If the person vomits by himself, make sure that the vomit is not inhaled. In life threatening conditions first of all provide resuscitation of the affected person and ensure medical assistance. Respiratory arrest - provide artificial respiration immediately. Cardiac arrest - provide indirect cardiac massage immediately.

If inhaled

Terminate the exposure immediately; move the affected person to fresh air. Protect the person against growing cold. Provide medical treatment if irritation, dyspnoea or other symptoms persist.

If on skin

Remove contaminated clothes. Wash the affected area with plenty of water, lukewarm if possible. Soap, soap solution or shampoo should be used if there is no skin injury. Provide medical treatment if skin irritation persists.

If in eyes

Do not rub your eyes - it could lead to mechanical damage of the cornea. Rinse eyes immediately with a flow of running water, open the eyelids (also using force if needed); remove contact lenses immediately if worn by the affected person. No neutralization should be performed in any case! Rinsing should be continued for 10-30 minutes from the inner to the outer eye corner to make sure that the other eye is not involved. Depending on the situation, call medical rescue service or ensure medical treatment as promptly as possible. Everyone must be referred for treatment even if affected only a little.

If swallowed

Provide medical treatment. For persons with no symptoms, call the Toxicological Information Centre to decide about the need of medical treatment; provide information about the substances or composition of the product from the original packaging or the Safety Data Sheet of the product.

4.2. Most important symptoms and effects, both acute and delayed

If inhaled

Inhaling dust can cause corrosion of the breathing system. Cough, headache. May cause respiratory irritation.

If on skin

Not expected.

If in eyes

Causes serious eye damage.

If swallowed

Corrosion of the digestion system can occur.

4.3. Indication of any immediate medical attention and special treatment needed

Symptomatic treatment.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Alcohol-resistant foam, carbon dioxide, powder, water spray jet, water mist.

Unsuitable extinguishing media

Water - full jet.

5.2. Special hazards arising from the substance or mixture

In the event of fire, carbon monoxide, carbon dioxide and other toxic gases may arise. Inhalation of hazardous degradation (pyrolysis) products may cause serious health damage.

5.3. Advice for firefighters

Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit only where personal (close) contact is likely. Use a self-contained breathing apparatus and full-body protective clothing. Do not allow run-off of contaminated fire extinguishing material to enter drains or surface and ground water.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment for work. Follow the instructions in the Sections 7 and 8. Do not inhale dust. Prevent contact with skin and eyes.

6.2. Environmental precautions

Prevent contamination of the soil and entering surface or ground water.

6.3. Methods and material for containment and cleaning up

Place the product mechanically in an appropriate manner. Dispose of the collected material according to the instructions in the section 13.

6.4. Reference to other sections

See the Section 7, 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Do not inhale dust. Prevent contact with skin and eyes. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area. Use personal protective equipment as per Section 8. Observe valid legal regulations on safety and health protection.

7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed containers in cold, dry and well ventilated areas designated for this purpose. Store locked up. Keep container tightly closed. Protect from moisture. Store in Al. Stainless steel. HDPE.

Storage temperature min 0 °C, max 30 °C

7.3. Specific end use(s)

not available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

DNEL

| perboric acid (HBO(O2)), sodium salt, tetrahydrate | | | |
|--|-------------------|-----------------------|--------------------------|
| Workers / consumers | Route of exposure | Value | Effect |
| Workers | Inhalation | 2 mg/m ³ | Chronic effects systemic |
| Workers | Dermal | 101 mg/kg | Chronic effects systemic |
| Consumers | Inhalation | 0.5 mg/m ³ | Chronic effects systemic |
| Consumers | Dermal | 36 mg/kg | Chronic effects systemic |
| Consumers | Oral | 0.36 mg/kg | Chronic effects systemic |

8.2. Exposure controls

Follow the usual measures intended for health protection at work and especially for good ventilation. This can be achieved only by local suction or efficient general ventilation. If exposure limits cannot be observed in this mode, suitable protection of airways must be used. Do not eat, drink and smoke during work. Wash your hands thoroughly with water and soap after work and before breaks for a meal and rest.

Eye/face protection

Protective goggles or face shield (based on the nature of the work performed).

Skin protection

Hand protection: Protective gloves resistant to the product (nitrile rubber). When choosing appropriate thickness, material and permeability of the gloves, observe recommendations of their particular manufacturer. Observe other recommendations of the manufacturer. Other protection: protective workwear. Contaminated skin should be washed thoroughly.

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Respiratory protection

Use a mask with anti-dust filter when the exposition limits of the substances are exceeded or at the place with insufficient ventilation.

Thermal hazard

Not available.

Environmental exposure controls

Observe usual measures for protection of the environment, see Section 6.2.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|--|-----------------------|
| Physical state | solid |
| Colour | white |
| Odour | without fragrance |
| Melting point/freezing point | 65 °C |
| Boiling point or initial boiling point and boiling range | data not available |
| Flammability | data not available |
| Lower and upper explosion limit | data not available |
| Flash point | data not available |
| Auto-ignition temperature | data not available |
| Decomposition temperature | data not available |
| pH | 10.1-10.4 (undiluted) |
| Kinematic viscosity | data not available |
| Solubility in water | 23.4 g/l |
| Partition coefficient n-octanol/water (log value) | data not available |
| Vapour pressure | data not available |
| Density and/or relative density | data not available |
| Relative vapour density | data not available |
| Particle characteristics | data not available |

9.2. Other information

not available

SECTION 10: Stability and reactivity

10.1. Reactivity

not available

10.2. Chemical stability

The product is stable under normal conditions.

10.3. Possibility of hazardous reactions

Unknown.

10.4. Conditions to avoid

The product is stable and no degradation occurs under normal use. Protect against flames, sparks, overheating and against frost.

10.5. Incompatible materials

Strong acids and basen. Reducing agents. Heavy metals (salts of heavy metals). Powdered metals.

10.6. Hazardous decomposition products

Not developed under normal uses. Dangerous outcomes such as carbon monoxide and carbon dioxide are formed at high temperature and in fire.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

No toxicological data is available for the substance.

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Acute toxicity

Harmful if inhaled.

| perboric acid (HBO(O2)), sodium salt, tetrahydrate | | | | | |
|--|------------------|------------------------|---------------|-------------------------|-----|
| Route of exposure | Parameter | Value | Exposure time | Species | Sex |
| Oral | LD ₅₀ | 2567 mg/kg | | Rat (Rattus norvegicus) | |
| Oral | NOEL | <1000 mg/kg | | Rat (Rattus norvegicus) | |
| Dermal | LD ₅₀ | >2000 mg/kg | | Rabbit | |
| Inhalation (aerosols) | LC ₅₀ | 1165 mg/m ³ | 4 hours | Rabbit | |

Skin corrosion/irritation

Based on available data the classification criteria are not met.

| perboric acid (HBO(O2)), sodium salt, tetrahydrate | | | |
|--|----------------|---------------|---------|
| Route of exposure | Result | Exposure time | Species |
| | Not irritating | | |

Serious eye damage/irritation

Causes serious eye damage.

| perboric acid (HBO(O2)), sodium salt, tetrahydrate | | | |
|--|---------------------------------------|---------------|---------|
| Route of exposure | Result | Exposure time | Species |
| | Highly irritating, Serious eye damage | | |

Respiratory or skin sensitisation

Based on available data the classification criteria are not met.

Germ cell mutagenicity

Based on available data the classification criteria are not met.

Carcinogenicity

Based on available data the classification criteria are not met.

Reproductive toxicity

May damage the unborn child. Suspected of damaging fertility.

Toxicity for specific target organ - single exposure

May cause respiratory irritation.

| perboric acid (HBO(O2)), sodium salt, tetrahydrate | | | | | |
|--|-----------|-------|------------|---------|-----|
| Route of exposure | Parameter | Value | Result | Species | Sex |
| Inhalation | | | Irritating | | |

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Toxicity for specific target organ - repeated exposure

Based on available data the classification criteria are not met.

| perboric acid (HBO(O2)), sodium salt, tetrahydrate | | | | | | |
|--|-----------|-------------|---------------|----------|-------------------------|-----|
| Route of exposure | Parameter | Value | Exposure time | Result | Species | Sex |
| | NOEL | <1000 mg/kg | 28 days | Positive | Rat (Rattus norvegicus) | |

Aspiration hazard

Based on available data the classification criteria are not met.

11.2. Information on other hazards

Endocrine disrupting properties

Based on available data the classification criteria are not met. Does not contain any components that may cause endocrine disruption for humans.

Other information

not available

SECTION 12: Ecological information

12.1. Toxicity

not available

Acute toxicity

| perboric acid (HBO(O2)), sodium salt, tetrahydrate | | | | |
|--|-----------|---------------|-----------------------------------|-------------|
| Parameter | Value | Exposure time | Species | Environment |
| LC50 | 51 mg/l | 96 hours | Fish (Branchydanio rerio) | |
| NOEC | 25 mg/l | 96 hours | Fish (Branchydanio rerio) | |
| EC50 | 11 mg/l | 48 hours | Invertebrates (Daphnia magna) | |
| NOEC | 8 mg/l | 48 hours | Invertebrates (Daphnia magna) | |
| IC50 | 26.8 mg/l | 96 hours | Algae (Scenedesmus subspicatus) | |
| EC50 | 3.3 mg/l | | Algae (Selenastrum capricornutum) | |
| LOEC | 500 mg/l | 14 days | Microorganisms | |

12.2. Persistence and degradability

not available

Half-life time

| perboric acid (HBO(O2)), sodium salt, tetrahydrate | | | |
|--|-----------------|---------------------|--------|
| Route of exposure | Value | Value determination | Source |
| | 0,5-8,5 minutes | | |

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Biodegradability

| perboric acid (HBO(O2)), sodium salt, tetrahydrate | | | | |
|--|-------|---------------|-------------|---------------|
| Parameter | Value | Exposure time | Environment | Result |
| | | | | Biodegradable |

12.3. Bioaccumulative potential

Not available.

12.4. Mobility in soil

Not available.

12.5. Results of PBT and vPvB assessment

Based on available data the classification criteria are not met. Does not contain any PBT or vPvB components. Product does not contain any substance meeting the criteria for PBT or vPvB in accordance with the Annex XIII of Regulation (EC) No 1907/2006 (REACH) as amended.

12.6. Endocrine disrupting properties

Based on available data the classification criteria are not met. Does not contain any components that may cause endocrine disruption in the environment.

12.7. Other adverse effects

Not available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Hazard of environmental contamination; dispose of the waste in accordance with the local and/or national regulations. Any unused product and contaminated packaging should be put in labelled containers for waste collection and submitted for disposal to a person authorised for waste removal (a specialized company) that is entitled for such activity. Do not empty unused product in drainage systems. The product must not be disposed of with municipal waste. Empty containers may be used at waste incinerators to produce energy or deposited in a dump with appropriate classification. Perfectly cleaned containers can be submitted for recycling.

Waste management legislation

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste, as amended. Decision 2000/532/EC establishing a list of wastes, as amended.

SECTION 14: Transport information

14.1. UN number or ID number

not subject to transport regulations

14.2. UN proper shipping name

not relevant

14.3. Transport hazard class(es)

not relevant

14.4. Packing group

not relevant

14.5. Environmental hazards

not relevant

14.6. Special precautions for user

Reference in the Sections 4 to 8.

14.7. Maritime transport in bulk according to IMO instruments

not relevant

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SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18th December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing the European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Restrictions pursuant to Annex XVII of Regulation (EC) No. 1907/2006 (REACH), as amended

perboric acid (HBO(O₂)), sodium salt, tetrahydrate

| Restriction | Conditions of restriction |
|-------------|--|
| 30 | <p>1. Shall not be placed on the market, or used,</p> <ul style="list-style-type: none"> – as substances, – as constituents of other substances, or, – in mixtures, for supply to the general public when the individual concentration in the substance or mixture is equal to or greater than: <ul style="list-style-type: none"> – either the relevant specific concentration limit specified in Part 3 of Annex VI to Regulation (EC) No 1272/2008, or, – the relevant generic concentration limit specified in Part 3 of Annex I of Regulation (EC) No 1272/2008. <p>Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of substances and mixtures, suppliers shall ensure before the placing on the market that the packaging of such substances and mixtures is marked visibly, legibly and indelibly as follows:</p> <p>“Restricted to professional users”.</p> <p>2. By way of derogation, paragraph 1 shall not apply to:</p> <ul style="list-style-type: none"> (a) medicinal or veterinary products as defined by Directive 2001/82/EC and Directive 2001/83/EC; (b) cosmetic products as defined by Directive 76/768/EEC; (c) the following fuels and oil products: <ul style="list-style-type: none"> – motor fuels which are covered by Directive 98/70/EC, – mineral oil products intended for use as fuel in mobile or fixed combustion plants, – fuels sold in closed systems (e.g. liquid gas bottles); (d) artists’ paints covered by Regulation (EC) No 1272/2008; (e) the substances listed in Appendix 11, column 1, for the applications or uses listed in Appendix 11, column 2. Where a date is specified in column 2 of Appendix 11, the derogation shall apply until the said date. (f) devices covered by Regulation (EU) 2017/745. |

15.2. Chemical safety assessment

A chemical safety assessment has been carried out for this substance by the supplier.

SECTION 16: Other information

A list of standard risk phrases used in the safety data sheet

| | |
|--------|---|
| H318 | Causes serious eye damage. |
| H319 | Causes serious eye irritation. |
| H332 | Harmful if inhaled. |
| H335 | May cause respiratory irritation. |
| H360D | May damage the unborn child. |
| H360Df | May damage the unborn child. Suspected of damaging fertility. |

Guidelines for safe handling used in the safety data sheet

| | |
|------|----------------------|
| P280 | Wear eye protection. |
|------|----------------------|

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P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a doctor.

Other important information about human health protection

The product must not be - unless specifically approved by the manufacturer/importer - used for purposes other than as per the Section 1. The user is responsible for adherence to all related health protection regulations.

Key to abbreviations and acronyms used in the safety data sheet

| | |
|------------------|---|
| Acute Tox. | Acute toxicity |
| ADR | European agreement concerning the international carriage of dangerous goods by road |
| BCF | Bioconcentration Factor |
| CAS | Chemical Abstracts Service |
| CLP | Regulation (EC) No 1272/2008 on classification, labelling and packaging of substance and mixtures |
| EC | Identification code for each substance listed in EINECS |
| EC ₅₀ | Concentration of a substance when it is affected 50 % of the population |
| EINECS | European Inventory of Existing Commercial Chemical Substances |
| EmS | Emergency plan |
| EU | European Union |
| EuPCS | European Product Categorisation System |
| Eye Dam. | Serious eye damage |
| Eye Irrit. | Eye irritation |
| IATA | International Air Transport Association |
| IBC | International Code For The Construction And Equipment of Ships Carrying Dangerous Chemicals |
| IC ₅₀ | Concentration causing 50% blockade |
| ICAO | International Civil Aviation Organization |
| IMDG | International Maritime Dangerous Goods |
| IMO | International Maritime Organization |
| INCI | International Nomenclature of Cosmetic Ingredients |
| ISO | International Organization for Standardization |
| IUPAC | International Union of Pure and Applied Chemistry |
| LC ₅₀ | Lethal concentration of a substance in which it can be expected death of 50% of the population |
| LD ₅₀ | Lethal dose of a substance in which it can be expected death of 50% of the population |
| log Kow | Octanol-water partition coefficient |
| NOEC | No observed effect concentration |
| NOEL | No observed effect level |
| OEL | Occupational Exposure Limits |
| PBT | Persistent, bioaccumulative and toxic |
| PMT | Persistent, mobile and toxic |
| ppm | Parts per million |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals |
| Repr. | Reproductive toxicity |
| RID | Agreement on the transport of dangerous goods by rail |
| STOT SE | Specific target organ toxicity - single exposure |
| UN | Four-figure identification number of the substance or article taken from the UN Model Regulations |
| UVCB | Substances of unknown or variable composition, complex reaction products or biological materials |
| VOC | Volatile organic compounds |
| vPvB | Very persistent and very bioaccumulative |

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vPvM Very persistent and very mobile

Training guidelines

Inform the personnel about the recommended ways of use, mandatory protective equipment, first aid and prohibited ways of handling the product.

Recommended restrictions of use

not available

Information about data sources used to compile the Safety Data Sheet

REGULATION (EC) No. 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (REACH) as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Data from the manufacturer of the substance / mixture, if available - information from registration dossiers.

The changes (which information has been added, deleted or modified)

The version 3.0 replaces the SDS version from Thursday, 22 September 2022. Changes were made in sections 1, 2, 11, 12, 13, 15 and 16.

More information

Classification procedure - calculation method.

Statement

The safety data sheet provides information aimed at ensuring safety and health protection at work and environmental protection. The provided information corresponds to the current status of knowledge and experience and complies with valid legal regulations. The information should not be understood as guaranteeing the suitability and usability of the product for a particular application.