



SAFETY DATA SHEET

Permabond TA436

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

1.1. Product identifier

Product name Permabond TA436

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

Identified uses Adhesive.

1.3. Details of the supplier of the safety data sheet

Supplier Permabond Engineering Adhesives Ltd.
 Wessex Way
 Colden Common
 Winchester
 Hampshire. SO21 1WP
 United Kingdom
 Tel: +44 (0)1962 711 661
 Fax: +44 (0)1962 711 662
 info.europe@permabond.com

1.4. Emergency telephone number

Emergency telephone UK +44 (0)1962 711 661 USA 0800 640 7599 Asia +86 (0)21 5773 4913

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Not Classified

Health hazards Skin Irrit. 2 - H315 Eye Dam. 1 - H318 Skin Sens. 1 - H317 Repr. 1B - H360Df STOT SE 3 - H335

Environmental hazards Not Classified

Classification (67/548/EEC or 1999/45/EC) Xi;R36/37/38. R43.

2.2. Label elements

Pictogram



Signal word

Danger

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| | |
|---|--|
| Hazard statements | H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H335 May cause respiratory irritation. H360Df May damage the unborn child. Suspected of damaging fertility. |
| Precautionary statements | P202 Do not handle until all safety precautions have been read and understood. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P302+P352a IF ON SKIN: Wash with plenty of soap and water P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P308+P313 IF exposed or concerned: Get medical advice/ attention. |
| Contains | TETRAHYDROFURFURYL METHACRYLATE, METHACRYLIC ACID, 2-HYDROXYETHYL METHACRYLATE, CUMENE HYDROPEROXIDE |
| Supplementary precautionary statements | P261 Avoid breathing vapour/ spray. P264 Wash contaminated skin thoroughly after handling. P271 Use only outdoors or in a well-ventilated area. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P333+P313 If skin irritation or rash occurs: Get medical advice/ attention. P362+P364 Take off contaminated clothing and wash it before reuse. P403+P233 Store in a well-ventilated place. Keep container tightly closed. P405 Store locked up. P501 Dispose of contents/container in accordance with existing Community, National and local regulations. |

2.3. Other hazards

None under normal conditions.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

| | | |
|--|--|---------------|
| 2-PHENOXYETHYL METHACRYLATE | | 10-30% |
| CAS number: 10595-06-9 | EC number: 234-201-1 | |
| Classification | Classification (67/548/EEC or 1999/45/EC) | |
| Skin Irrit. 2 - H315 | Xi;R36/38. | |
| Eye Irrit. 2 - H319 | | |
| TETRAHYDROFURFURYL METHACRYLATE | | 5-10% |
| CAS number: 2455-24-5 | EC number: 219-529-5 | |
| Classification | Classification (67/548/EEC or 1999/45/EC) | |
| Repr. 1B - H360Df | Xi;R36/37/38. | |

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|---|---|--|
| METHACRYLIC ACID | | 1-5% |
| CAS number: 79-41-4 | EC number: 201-204-4 | REACH registration number: 01-2119463884-26-XXXX |
| Classification Acute Tox. 4 - H302 Acute Tox. 3 - H311 Acute Tox. 4 - H332 Skin Corr. 1A - H314 Eye Dam. 1 - H318 STOT SE 3 - H335 | Classification (67/548/EEC or 1999/45/EC) C;R35 Xn;R21/22 | |
| 2-HYDROXYETHYL METHACRYLATE | | 1-5% |
| CAS number: 868-77-9 | EC number: 212-782-2 | REACH registration number: 01-2119490169-29-XXXX |
| Classification Eye Irrit. 2 - H319 Skin Sens. 1 - H317 | Classification (67/548/EEC or 1999/45/EC) R43 Xi;R36/38 | |
| CUMENE HYDROPEROXIDE | | 1-< 2.5% |
| CAS number: 80-15-9 | EC number: 201-254-7 | REACH registration number: 01-2119475796-19-XXXX |
| Classification Org. Perox. E - H242 Acute Tox. 4 - H302 Acute Tox. 4 - H312 Acute Tox. 3 - H331 Skin Corr. 1B - H314 Eye Dam. 1 - H318 STOT SE 3 - H335 STOT RE 2 - H373 Aquatic Chronic 2 - H411 | Classification (67/548/EEC or 1999/45/EC) O;R7 T;R23 C;R34 Xn;R21/22,R48/20/22 N;R51/53 | |

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

| | |
|---------------------|--|
| Inhalation | Move the exposed person to fresh air. Get medical attention if any discomfort continues. |
| Ingestion | Rinse mouth thoroughly with water. Give plenty of water to drink. Do not induce vomiting. Get medical attention. |
| Skin contact | Remove contaminated clothing. Wash skin thoroughly with soap and water. If symptoms develop, obtain medical attention |
| Eye contact | Remove any contact lenses and open eyelids wide apart. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention. |

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

| | |
|-------------------|-----------------------|
| Inhalation | May cause irritation. |
|-------------------|-----------------------|

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Skin contact Skin irritation. Mild dermatitis, allergic skin rash.

Eye contact Causes serious eye damage.

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

Notes for the doctor No specific recommendations. Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Foam, carbon dioxide or dry powder.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products Burning produces irritating, toxic and obnoxious fumes. Carbon monoxide, carbon dioxide, and unknown hydrocarbons. Oxides of nitrogen.

5.3. Advice for firefighters

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Environmental precautions Not considered to be a significant hazard due to the small quantities used. Avoid discharge into drains.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Absorb spillage with sand or other inert absorbent. Transfer to suitable, labelled containers for disposal.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Use in a well ventilated area. Avoid contact with skin and eyes. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in closed original container at temperatures between 5°C and 25°C. Never return unused material to storage receptacle.

7.3. Specific end use(s)

Usage description Adhesive.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits

METHACRYLIC ACID

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Long-term exposure limit (8-hour TWA): WEL 20 ppm 72 mg/m³

Short-term exposure limit (15-minute): WEL 40 ppm 143 mg/m³

WEL = Workplace Exposure Limit

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate ventilation. Avoid inhalation of vapours. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection

The following protection should be worn: Chemical splash goggles or face shield. Personal eye protection should conform to EN 166

Hand protection

Nitrile rubber or Viton™ gloves are recommended. Cotton or other absorbent gloves should not be worn. Gloves should conform to EN 374. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material.

Other skin and body protection

Employee must wear appropriate protective clothing and equipment to prevent any possibility of skin contact with this substance.

Hygiene measures

Wash hands at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke. Use of good industrial hygiene practices is required.

Respiratory protection

No specific recommendations. Respiratory protection may be required if excessive airborne contamination occurs.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

| | |
|--|---|
| Appearance | Liquid. |
| Colour | Amber. |
| Odour | Acrylic |
| Odour threshold | Not available. |
| pH | Not relevant. |
| Melting point | Not available. |
| Initial boiling point and range | Not applicable. |
| Flash point | >100°C |
| Evaporation rate | Not available. |
| Upper/lower flammability or explosive limits | Not available. |
| Vapour pressure | Not available. |
| Vapour density | Not available. |
| Relative density | 1.1 |
| Solubility(ies) | Slightly soluble in water. Miscible with the following materials: Organic solvents. |
| Auto-ignition temperature | Not available. |

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| | |
|----------------------------------|---------------------------------|
| Decomposition Temperature | Not available. |
| Viscosity | ≈25000 mPa s @ 23°C Thixotropic |
| Oxidising properties | Not available. |

9.2. Other information

| | |
|--------------------------|---------------|
| Other information | Not relevant. |
|--------------------------|---------------|

SECTION 10: Stability and reactivity

10.1. Reactivity

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| Reactivity | The following materials may react with the product: Strong oxidising agents. |
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10.2. Chemical stability

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|------------------|--|
| Stability | Stable at normal ambient temperatures. |
|------------------|--|

10.3. Possibility of hazardous reactions

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|---|---|
| Possibility of hazardous reactions | There are no known reactivity hazards associated with this product. |
|---|---|

10.4. Conditions to avoid

| | |
|----------------------------|---|
| Conditions to avoid | Stable at normal ambient temperatures and when used as recommended. |
|----------------------------|---|

10.5. Incompatible materials

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|---------------------------|--|
| Materials to avoid | No specific material or group of materials is likely to react with the product to produce a hazardous situation. |
|---------------------------|--|

10.6. Hazardous decomposition products

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| Hazardous decomposition products | Thermal decomposition could produce carbon monoxide, carbon dioxide, and unidentified organic compounds. |
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SECTION 11: Toxicological information

11.1. Information on toxicological effects

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|------------------------------|--|
| Toxicological effects | The toxicological properties of this product have not been fully evaluated. Avoid direct contact with skin or eyes. Do not ingest or inhale. |
|------------------------------|--|

Skin sensitisation

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|---------------------------|--|
| Skin sensitisation | May cause sensitisation by skin contact. |
|---------------------------|--|

Reproductive toxicity

| | |
|--|----------------------------------|
| Reproductive toxicity - fertility | Suspected of damaging fertility. |
|--|----------------------------------|

| | |
|--|------------------------------|
| Reproductive toxicity - development | May damage the unborn child. |
|--|------------------------------|

Aspiration hazard

| | |
|--------------------------|---|
| Aspiration hazard | Not anticipated to present an aspiration hazard, based on chemical structure. |
|--------------------------|---|

| | |
|-------------------|--|
| Inhalation | May cause respiratory system irritation. |
|-------------------|--|

| | |
|------------------|--|
| Ingestion | No harmful effects expected from quantities likely to be ingested by accident. |
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| | |
|---------------------|--|
| Skin contact | Prolonged and frequent contact may cause redness and irritation. |
|---------------------|--|

| | |
|--------------------|-------------------------------|
| Eye contact | May cause serious eye damage. |
|--------------------|-------------------------------|

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Toxicological information on ingredients.

TETRAHYDROFURFURYL METHACRYLATE

Acute toxicity - oral

Acute toxicity oral (LD₅₀
mg/kg) 4,000.0

Species Rat

ATE oral (mg/kg) 4,000.0

Reproductive toxicity

Reproductive toxicity - fertility Suspected of damaging fertility.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure NOAEL 300 mg/kg, Oral, Rat

METHACRYLIC ACID

Acute toxicity - oral

Acute toxicity oral (LD₅₀
mg/kg) 1,320.0

Species Rat

ATE oral (mg/kg) 500.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀
mg/kg) 1,000.0

Species Rabbit

ATE dermal (mg/kg) 1,000.0

Acute toxicity - inhalation

Acute toxicity inhalation
(LC₅₀ vapours mg/l) 7.1

Species Rat

ATE inhalation (vapours
mg/l) 11.0

2-HYDROXYETHYL METHACRYLATE

Acute toxicity - oral

Acute toxicity oral (LD₅₀
mg/kg) 5,000.0

Species Rat

ATE oral (mg/kg) 5,000.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀
mg/kg) 3,000.0

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| | |
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| Species | Rabbit |
| ATE dermal (mg/kg) | 3,000.0 |

CUMENE HYDROPEROXIDE

Acute toxicity - oral

| | |
|--|-------|
| Acute toxicity oral (LD₅₀ mg/kg) | 382.0 |
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| | |
|----------------|-----|
| Species | Rat |
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| | |
|-------------------------|-------|
| ATE oral (mg/kg) | 500.0 |
|-------------------------|-------|

Acute toxicity - dermal

| | |
|---------------------------|---------|
| ATE dermal (mg/kg) | 1,100.0 |
|---------------------------|---------|

Acute toxicity - inhalation

| | |
|--------------------------------------|-----|
| ATE inhalation (vapours mg/l) | 3.0 |
|--------------------------------------|-----|

Skin corrosion/irritation

| | |
|--------------------|--------------------|
| Animal data | Highly irritating. |
|--------------------|--------------------|

Serious eye damage/irritation

| | |
|--------------------------------------|---------------------|
| Serious eye damage/irritation | Irritating to eyes. |
|--------------------------------------|---------------------|

Skin sensitisation

| | |
|---------------------------|------------------|
| Skin sensitisation | Not sensitising. |
|---------------------------|------------------|

SECTION 12: Ecological Information

| | |
|--------------------|--|
| Ecotoxicity | Not regarded as dangerous for the environment. |
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12.1. Toxicity

| | |
|-----------------|--------------------|
| Toxicity | No data available. |
|-----------------|--------------------|

Ecological information on ingredients.

TETRAHYDROFURFURYL METHACRYLATE

| | |
|------------------------------|---|
| Acute toxicity - fish | LC ₅₀ , 96 hours: 34.7 mg/l, Pimephales promelas (Fat-head Minnow) |
|------------------------------|---|

| | |
|--|---|
| Acute toxicity - aquatic plants | EC ₅₀ , 72 hours: >100 mg/l, Desmodemus subspicatus NOEC, 72 hours: >100 mg/l, Desmodemus subspicatus |
|--|---|

| | |
|---|---|
| Chronic toxicity - aquatic invertebrates | NOEC, 21 days: 37.2 mg/l, Daphnia magna |
|---|---|

METHACRYLIC ACID

| | |
|------------------------------|--|
| Acute toxicity - fish | LC ₅₀ , 96 hours: 85 mg/l, Onchorhynchus mykiss (Rainbow trout) |
|------------------------------|--|

| | |
|---|--|
| Acute toxicity - aquatic invertebrates | EC ₅₀ , 48 hours: > 130 mg/l, Daphnia magna |
|---|--|

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| | |
|---|---|
| Acute toxicity - aquatic plants | EC ₅₀ , 72 hours: 45 mg/l, Selenastrum capricornutum LOEC, 72 hours: 45 mg/l, Selenastrum capricornutum |
| Acute toxicity - microorganisms | EC ₅₀ , 17 hours: 270 mg/l, Pseudomonas putida |
| Chronic toxicity - fish early life stage | NOEC, 35 days: 10 mg/l, Danio rerio (Zebrafish) |
| Chronic toxicity - aquatic invertebrates | NOEC, 21 days: 53 mg/l, Daphnia magna |

2-HYDROXYETHYL METHACRYLATE

| | |
|---|---|
| Acute toxicity - fish | LC ₅₀ , 96 hours: > 100 mg/l, Oryzias latipes (Red killifish) |
| Acute toxicity - aquatic invertebrates | EC ₅₀ , 48 hours: 380 mg/l, Daphnia magna |
| Acute toxicity - aquatic plants | EC ₅₀ , 72 hours: 836 mg/l, Selenastrum capricornutum NOEC, 72 hours: 400 mg/l, Selenastrum capricornutum |
| Acute toxicity - microorganisms | EC ₅₀ , 16 hours: > 3000 mg/l, Pseudomonas fluorescens |
| Chronic toxicity - aquatic invertebrates | NOEC, 21 days: 24.1 mg/l, Daphnia magna |

CUMENE HYDROPEROXIDE

| | |
|------------------------------|--|
| Acute toxicity - fish | LC ₅₀ , 96 hour: 3.9 mg/l, Onchorhynchus mykiss (Rainbow trout) |
|------------------------------|--|

12.2. Persistence and degradability

Persistence and degradability No data available.

Ecological information on ingredients.

TETRAHYDROFURFURYL METHACRYLATE

| | |
|--------------------------------------|---------------------------------------|
| Persistence and degradability | The product is readily biodegradable. |
| Biodegradation | - 75%: 28 days |

METHACRYLIC ACID

| | |
|-----------------------|----------------------------------|
| Biodegradation | Water - Degradation 86%: 28 days |
|-----------------------|----------------------------------|

2-HYDROXYETHYL METHACRYLATE

| | |
|-----------------------|----------------------------------|
| Biodegradation | Water - Degradation 84%: 28 days |
|-----------------------|----------------------------------|

CUMENE HYDROPEROXIDE

| | |
|-----------------------|---|
| Biodegradation | The substance is readily biodegradable. |
|-----------------------|---|

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

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Ecological information on ingredients.

2-HYDROXYETHYL METHACRYLATE

Bioaccumulative potential BCF: 1.34 - 1.54,

12.4. Mobility in soil

Mobility No data available.

Ecological information on ingredients.

2-HYDROXYETHYL METHACRYLATE

Adsorption/desorption coefficient Water - Koc: 42.7 @ 20°C

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

12.6. Other adverse effects

Other adverse effects None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information Waste disposal should be in accordance with existing Community, National and local regulations Empty containers may contain product residue; follow SDS and label warnings even after they have been emptied.

Disposal methods Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.

Waste class 08 04 09* waste adhesives and sealants containing organic solvents or other dangerous substances.

SECTION 14: Transport information

General The product is not classified as dangerous for carriage.

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

Not applicable.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

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Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information

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

| | |
|-----------------------------|--|
| National regulations | The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No. 716). |
| EU legislation | Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended). COMMISSION REGULATION (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) |
| Guidance | Workplace Exposure Limits EH40. CHIP for everyone HSG228. Approved Classification and Labelling Guide (Sixth edition) L131. Safety Data Sheets for Substances and Preparations. |

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

| | |
|-----------------------------|--|
| Revision date | 18/05/2016 |
| Revision | 2 |
| Supersedes date | 03/06/2013 |
| Risk phrases in full | R21/22 Harmful in contact with skin and if swallowed. R23 Toxic by inhalation. R34 Causes burns. R35 Causes severe burns. R36/37/38 Irritating to eyes, respiratory system and skin. R36/38 Irritating to eyes and skin. R37 Irritating to respiratory system. R43 May cause sensitisation by skin contact. R48/20/22 Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed. R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. R7 May cause fire. |

Permabond TA436

Hazard statements in full

H242 Heating may cause a fire.
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H360Df May damage the unborn child. Suspected of damaging fertility.
H373 May cause damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.