

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

1.1. Product identifier

Product form : Mixture
 Product name : PUP-TURBO
 Product group : Blend

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

1.2.1. Relevant identified uses

Main use category : Professional use, Industrial use

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Sidec
 Industrieweg 10
 2490 Balen - BELGIE
 T +32 14 81 50 01
safety@sidec.be - www.sidec.eu

1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number
Belgium	Centre Anti-Poisons/Antigifocentrum c/o Hôpital Central de la Base - Reine Astrid	Rue Bruyn 1 1120 Bruxelles/Brussel	+32 70 245 245

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute Tox. 4 (Inhalation:dust,mist) H332
 Skin Irrit. 2 H315
 Eye Irrit. 2 H319
 Resp. Sens. 1 H334
 Skin Sens. 1 H317
 Carc. 2 H351
 STOT SE 3 H335
 STOT RE 2 H373

Full text of H statements : see section 16

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



Signal word (CLP) :

Danger

Hazardous ingredients

: Polymeric MDI; 4,4'-Diphenylmethane diisocyanate; Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-hydroxy-, polymer with 1,1'-methylenebis[isocyanatobenzene]; Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate

Hazard statements (CLP)

: H315 - Causes skin irritation.
 H317 - May cause an allergic skin reaction.
 H319 - Causes serious eye irritation.
 H332 - Harmful if inhaled.
 H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 H335 - May cause respiratory irritation.
 H351 - Suspected of causing cancer.

PUP-TURBO

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Precautionary statements (CLP)	<p>H373 - May cause damage to organs through prolonged or repeated exposure.</p> <p>: P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood. P260 - Do not breathe vapours, gas, mist, fume, dust. P264 - Wash hands, face thoroughly after handling. P271 - Use only outdoors or in a well-ventilated area. P272 - Contaminated work clothing should not be allowed out of the workplace.</p>
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2.3. Other hazards

Adverse physicochemical, human health and environmental effects	: Suspected of causing cancer. May cause damage to organs through prolonged or repeated exposure. Harmful if inhaled. May cause respiratory irritation. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
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SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Polymeric MDI	(CAS-No.) 9016-87-9 (EC-No.) 500-079-6 (REACH-no) 01-2119457024-46	13 - 30	Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373
4,4'-Diphenylmethane diisocyanate	(CAS-No.) 101-68-8 (EC-No.) 202-966-0 (EC Index-No.) 615-005-00-9 (REACH-no) 01-2119457014-47	13 - 30	Carc. 2, H351 Resp. Sens. 1, H334 Skin Sens. 1, H317 Acute Tox. 4 (Inhalation), H332 STOT RE 2, H373 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335
Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro.-omega.-hydroxy-, polymer with 1,1'-methylenebis[isocyanatobenzene]	(CAS-No.) 39420-98-9 (EC-No.) 643-036-8	13 - 30	Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Resp. Sens. 1A, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373
Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate	(EC Index-No.) 905-806-4 (REACH-no) 01-2119457015-45	13 - 30	Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373
1,1'-Methylenebis [isocyanatobenzene], polymer with 1,2-ethanediamine, methyloxirane and oxirane, block		13 - 30	Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373

Specific concentration limits:

Name	Product identifier	Specific concentration limits
4,4'-Diphenylmethane diisocyanate	(CAS-No.) 101-68-8 (EC-No.) 202-966-0 (EC Index-No.) 615-005-00-9 (REACH-no) 01-2119457014-47	(0,1 =<C < 100) Resp. Sens. 1, H334 (5 =<C < 100) STOT SE 3, H335 (5 =<C < 100) Skin Irrit. 2, H315 (5 =<C < 100) Eye Irrit. 2, H319

Full text of H-statements: see section 16

PUP-TURBO

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Call a poison center or a doctor if you feel unwell.
First-aid measures after inhalation	: If inhaled, remove to fresh air. If not breathing, give artificial respiration. Get medical attention immediately. Treatment is symptomatic for primary irritation or bronchospasm. If breathing is laboured, oxygen should be administered by qualified personnel.
First-aid measures after skin contact	: Wash off immediately with soap and plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention. An MDI study has demonstrated that a polyglycol-based skin cleanser (such as D-Tam TM , PEG-400) or corn oil may be more effective than soap and water.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
First-aid measures after ingestion	: Call a poison center or a doctor if you feel unwell. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

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

Symptoms/effects after inhalation	: LC50 (rat) : ca. 490 mg/m ³ (4 hours) : using experimentally produced respirable aerosol having aerodynamic diameter <5microns. This product is a respiratory irritant and potential respiratory sensitiser: repeated inhalation of vapour or aerosol at levels above the occupational exposure limit could cause respiratory sensitisation. Symptoms may include irritation to the eyes, nose, throat and lungs, possibly combined with dryness of the throat, tightness of chest and difficulty in breathing. The onset of the respiratory symptoms may be delayed for several hours after exposure. A hyper-reactive response to even minimal concentrations of MDI may develop in sensitised persons.
Symptoms/effects after skin contact	: Irritating to skin. May cause sensitisation by skin contact. Animal studies have shown that respiratory sensitisation can be induced by skin contact with known respiratory sensitisers including diisocyanates. These results emphasize the need for protective clothing including gloves to be worn at all times when handling these chemicals or in maintenance work.
Symptoms/effects after eye contact	: Eye irritation.
Symptoms/effects after ingestion	: Low oral toxicity. Ingestion may cause irritation of the gastrointestinal tract.

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

Treat symptomatically. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media	: Reacts on contact with water releasing carbon dioxide (CO ₂). Water may be used if no other available and then in copious quantities. Reaction between water and hot isocyanate may be vigorous. Prevent washings from entering water courses, keep fire exposed containers cool by spraying with water.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire	: Toxic fumes may be released. carbon dioxide (CO ₂). Carbon monoxide. Nitrogen dioxide.
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5.3. Advice for firefighters

Precautionary measures fire	: Evacuate and limit access.
Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing. Boots made of PVC. Safety helmet.
Other information	: Reacts on contact with water releasing carbon dioxide (CO ₂).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures	: Ventilate spillage area. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.
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6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
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6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	: Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.
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PUP-TURBO

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment. Do not breathe dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area. Avoid contact with skin and eyes.

Hygiene measures : Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store locked up. Keep container tightly closed. Keep cool. Store in a dry, well ventilated place away from sources of heat, ignition and direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

4,4'-Diphenylmethane diisocyanate (101-68-8)		
Belgium	Limit value (mg/m ³)	0,052 mg/m ³
Belgium	Limit value (ppm)	0,005 ppm
France	VME (mg/m ³)	0,1 mg/m ³
France	VME (ppm)	0,01 ppm
France	VLE (mg/m ³)	0,2 mg/m ³
France	VLE (ppm)	0,02 ppm
United Kingdom	WEL TWA (mg/m ³)	0,02 mg/m ³
United Kingdom	WEL STEL (mg/m ³)	0,07 mg/m ³
USA - ACGIH	ACGIH TWA (ppm)	0,005 ppm

8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Personal protective equipment : Gloves. Protective goggles.

Materials for protective clothing : Cotton dust. Tyvek® Gown/Coveralls

Hand protection : Wear suitable gloves tested to EN374. Since the product consists of several substances, it is possible to estimate the durability of the glove material beforehand and it therefore needs to be tested before use. Choosing the proper glove is a decision that depends not only on the type of material, but also on other quality features, which differ for each manufacturer. The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed. Recommended materials. Butyl rubber gloves. Viton. Vinyl. 5 (> 240 minutes)

Eye protection : Safety glasses. A risk assessment is required

Skin and body protection : Wear suitable protective clothing. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Body: Recommended: Overall (preferably heavy cotton) or Tyvek-Pro Tech 'C', Tyvek-Pro 'F' disposable coverall. Impervious footwear must be worn

Respiratory protection : Carry out operations in the open/under local exhaust/ventilation or with respiratory protection



Environmental exposure controls : Avoid release to the environment.

Other information : Wash hands and face before break and at end of works. Do not eat, drink or smoke when using this product. Separate working clothes from town clothes. Launder separately.

PUP-TURBO

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: No data available
Odour	: slight.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: > 130 °C [EC A.9 Flash-Point (closed cup)]
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapour pressure	: 0,0000024 kPa
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: 1,176 g/cm ³
Solubility	: No data available
Log Pow	: No data available
Viscosity, kinematic	: 370 mm ² /s
Viscosity, dynamic	: 440 - 500
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Insufficient data available.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Reaction with water (moisture) produces CO₂-gas. Exothermic reaction with materials containing active hydrogen groups. The reaction becomes progressively more vigorous and can be violent at higher temperatures if the miscibility of the reaction partners is good or is supported by stirring or by the presence of solvents. MDI is insoluble with, and heavier than water and sinks to the bottom but reacts slowly at the interface. A solid water-insoluble layer of polyurea is formed at the interface by liberating carbon dioxide gas.

10.4. Conditions to avoid

High temperature.

10.5. Incompatible materials

Amines. alcohols. acids and bases. Water.

10.6. Hazardous decomposition products

carbon oxides (CO and CO₂). Nitrogen oxides. hydrocarbons. Hydrogen cyanide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Inhalation:dust,mist: Harmful if inhaled.

ATE CLP (dust,mist)	1,5 mg/l/4h
4,4'-Diphenylmethane diisocyanate (101-68-8)	
LD50 oral rat	> 7616 mg/kg
LD50 dermal rabbit	> 9400 mg/kg bodyweight
LC50 inhalation rat (mg/l)	0,49 mg/l air

PUP-TURBO

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Polymeric MDI (9016-87-9)	
LD50 oral rat	> 10000 mg/m ³
LD50 dermal rabbit	> 9400
LC50 inhalation rat (mg/l)	> mg/l/4h

Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate	
LD50 oral rat	> 10000 g/kg
LD50 dermal rat	≈ 50 mg/kg
LD50 dermal rabbit	> 9400 mg/kg
LC50 inhalation rat (mg/l)	0,49 mg/l/4h

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitisation	: May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Suspected of causing cancer.
Reproductive toxicity	: Not classified
STOT-single exposure	: May cause respiratory irritation.
STOT-repeated exposure	: May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Not classified

PUP-TURBO	
Viscosity, kinematic	370 mm ² /s

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
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4,4'-Diphenylmethane diisocyanate (101-68-8)	
LC50 fish 1	> 1000 mg/l
EC50 Daphnia 1	129,7 mg/l
NOEC chronic crustacea	>= 10 mg/l

Polymeric MDI (9016-87-9)	
LC50 fish 1	> 1000 mg/l
EC50 Daphnia 1	> 1000 µg/l
NOEC chronic crustacea	> 10 ppm

Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate	
LC50 fish 1	> 1000 mg/l
NOEC (chronic)	> 10 mg/l

12.2. Persistence and degradability

4,4'-Diphenylmethane diisocyanate (101-68-8)	
Biodegradation	0 %

Polymeric MDI (9016-87-9)	
Persistence and degradability	Not readily biodegradable.
Biodegradation	0 %

12.3. Bioaccumulative potential

4,4'-Diphenylmethane diisocyanate (101-68-8)	
BCF fish 1	92 - 200
Bioconcentration factor (BCF REACH)	200
Log Pow	4,51

Polymeric MDI (9016-87-9)	
BCF fish 1	< 14

Reaction mass of 4,4'-methylenediphenyl diisocyanate and o-(p-isocyanatobenzyl)phenyl isocyanate / methylene diphenyl diisocyanate	
Log Pow	≈ 4,51

PUP-TURBO

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Component	
4,4'-Diphenylmethane diisocyanate (101-68-8)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions. Do not allow into drains or water courses.
Additional information	: This material and its container must be disposed of in a safe way.
European List of Waste (LoW) code	: 08 05 01* - waste isocyanates 16 03 05* - organic wastes containing dangerous substances

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (ADR)	: Not applicable
Proper Shipping Name (IMDG)	: Not applicable
Proper Shipping Name (IATA)	: Not applicable
Proper Shipping Name (ADN)	: Not applicable
Proper Shipping Name (RID)	: Not applicable

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : Not applicable

IMDG

Transport hazard class(es) (IMDG) : Not applicable

IATA

Transport hazard class(es) (IATA) : Not applicable

ADN

Transport hazard class(es) (ADN) : Not applicable

RID

Transport hazard class(es) (RID) : Not applicable

14.4. Packing group

Packing group (ADR)	: Not applicable
Packing group (IMDG)	: Not applicable
Packing group (IATA)	: Not applicable
Packing group (ADN)	: Not applicable
Packing group (RID)	: Not applicable

14.5. Environmental hazards

Dangerous for the environment	: No
Marine pollutant	: No
Other information	: No supplementary information available

14.6. Special precautions for user

- Overland transport

No data available

PUP-TURBO

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

- Transport by sea

No data available

- Air transport

No data available

- Inland waterway transport

Carriage prohibited (ADN) : No

Not subject to ADN : No

- Rail transport

Carriage prohibited (RID) : No

14.7. 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

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

15.1.2. National regulations

Germany

Reference to AwSV : Water hazard class (WGK) 3, Highly hazardous to water (Classification according to AwSV, Annex 1)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen : None of the components are listed

SZW-lijst van mutagene stoffen : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : None of the components are listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : None of the components are listed

Denmark

Recommendations Danish Regulation : Young people below the age of 18 years are not allowed to use the product
Pregnant/breastfeeding women working with the product must not be in direct contact with the product

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Full text of H- and EUH-statements:

Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Carc. 2	Carcinogenicity, Category 2
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Resp. Sens. 1	Respiratory sensitisation, Category 1
Resp. Sens. 1A	Respiratory sensitisation, Category 1A
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation

PUP-TURBO

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure.

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.