

SAFETY DATA SHEET



[In accordance with the criteria of Regulation No 1907/2006 (REACH) as amended]

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

1.1 Product identifier

Trade name: **TETRAPUR 90, 91 COMPONENT B**
 UFI: AV30-Q0UU-9007-KA6F

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

Relevant identified uses: hardener.
Uses advised against: not determinate.

1.3 Details of the supplier of the safety data sheet

Manufacturer: **BSG Sp. z o. o.**
 Address: Andrzeja Struga 20, 95-100 Zgierz, Poland
 Telephone/Fax number: +48 42 716 23 38/+48 42 716 23 54
 E-mail address for a competent person responsible for SDS: biuro@thetaconsulting.pl

1.4 Emergency telephone number

112

Section 2: Hazards identification

2.1 Classification of the substance or mixture

Flam. Liq. 3 H226, **Skin Sens. 1** H317, **STOT SE 3** H335, **STOT SE 3** H336

Flammable liquid and vapour. May cause an allergic skin reaction. May cause respiratory irritation. May cause drowsiness or dizziness.

2.2 Label elements

Hazard pictograms and signal words



WARNING

Names of dangerous components placed on label:

Contains: 3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate homopolymer, isocyanurate type; 4,4'-methylenediphenyl diisocyanate; butyl acetate.

Hazard statements

H226 Flammable liquid and vapour.
 H317 May cause an allergic skin reaction.
 H335 May cause respiratory irritation.
 H336 May cause drowsiness or dizziness.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P271 Use only outdoors or in a well-ventilated area.
 P302+P352 IF ON SKIN: Wash with plenty of water and soap.
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P501 Dispose of contents/container to properly labeled containers for selective waste collection emptied by an authorised company.

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Additional information

EUH066 Repeated exposure may cause skin dryness or cracking.
As from 24 August 2023 adequate training is required before industrial or professional use.

2.3 Other hazards

The components do not meet the criteria for PBT or vPvB in accordance with Annex XIII of Regulation REACH. The product does not contain substances included in the list established in accordance with Article 59(1) for having endocrine disrupting properties, or substances identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 (3) or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 % by weight.

Section 3: Composition/information on ingredients

3.1 Substances

Not applicable.

3.2 Mixtures

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate homopolymer, isocyanurate type

Concentration range: 60-70%
CAS number: 53880-05-0
EC number: 931-312-3
Index number: -
Registration number: 01-2119488734-24-0002
Classification: Skin Sens. 1B H317, STOT SE 3 H335

butyl acetate

Concentration range: 25-30%
CAS number: 123-86-4
EC number: 204-658-1
Index number: 607-025-00-1
Registration number: 01-2119485493-29-XXXX
Classification: Flam. Liq. 3 H226, STOT SE 3 H336, EUH066*

Substance with a specific value at the European Union level of the permissible concentration in the work environment.

*Supplemental hazard information.

4,4'-methylenediphenyl diisocyanate

Concentration range: < 0,35%
CAS number: 4098-71-9
EC number: 223-861-6
Index number: 615-008-00-5
Registration number: 01-2119490408-31-0002
Classification: Skin Irrit. 2 H315, Skin Sens. 1 H317, Eye Irrit. 2 H319, Resp. Sens.1 H334, Acute Tox. 3 H331, STOT SE 3 H335, Aquatic Chronic 2 H411

Specific concentration limits:

Resp. Sens. 1 H334: C ≥ 0,5 %, Skin Sens.1 H317: C ≥ 0,5 %

Full text of H phrases in Section 16.

Section 4: First aid measures

4.1 Description of first aid measures

Skin contact: immediately remove contaminated clothing. Wash contaminated areas with plenty of water and soap. In case of irritation occurs consult a doctor.

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Eye contact: consult a doctor if irritation occurs. Protect non-contaminated eye, remove contact lenses. Rinse thoroughly contaminated eyes with water for 10-15 minutes. Avoid strong stream of water - the risk of corneal damage.

Ingestion: do not induce vomiting. Rinse mouth with water. Do not drink alcohol! Never give anything by mouth to an unconscious person. Call a doctor immediately and show container or label.

Inhalation: immediately consult a physician. Remove to fresh air, keep warm and at rest. If breathing is difficult, give oxygen.

4.2 Most important symptoms and effects, both acute and delayed

Skin contact: redness, dryness, itching, rash or other skin changes, irritation, allergic reaction.

Eye contact: redness, tearing, burning.

After ingestion: abdominal pain, nausea, vomiting.

After inhalation: possible abdominal pain, nausea, vomiting.

Exposure effects: irritation of the respiratory tract, coughing.

4.3 Indication of any immediate medical attention and special treatment needed

Physician makes a decision regarding further medical treatment after thoroughly examination of the injured. Persons exposed to the product to leave under medical supervision for 48 hours (possibility of delayed onset of symptoms).

Section 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: CO₂, extinguishing powder, extinguishing foam, sand.

Unsuitable extinguishing media: water can be used when other extinguishing agents are not available. The reaction of water with hot product can be violent and emits carbon dioxide.

5.2 Special hazards arising from the substance or mixture

During combustion irritant and harmful vapours and gases: carbon oxides, nitrogen oxides and other unidentified products of thermal decomposition may be produced. Do not inhale combustion products – it can be dangerous for health. Above temperature 45 °C product may polymerize. In case of an uncontrolled polymerization in a closed container, there is a risk of explosion.

5.3 Advice for firefighters

Product is flammable. Personal protection typical in case of fire. Do not stay in the fire zone without self-contained breathing apparatus and protective clothing resistant to chemicals. Cool container at risk with fire from a safe distance with water spray. Do not allow extinguishing water entering drains, surface water and groundwater. Collect used extinguishing media.

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Limit the access for the outsiders into the breakdown area, until the suitable cleaning operations are completed. Ensure that only the trained personnel removes the effects of the accident. In case of large spills, isolate the area at risk. Use personal protective equipment. Avoid skin and eyes contamination. Ensure adequate ventilation. Do not breathe vapours. Prohibit smoking and using open flames. Prevent the formation of electrostatic discharges. Warning! Risk of slipping on a spilled product.

6.2 Environmental precautions

In case of release of large amounts of the product, it is necessary to take appropriate steps to prevent it from spreading into the environment. Notify the appropriate emergency services.

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6.3 Methods and material for containment and cleaning up

The product in liquid form should be collected using non-flammable liquid-absorbent materials (e.g., sand, soil, universal binding agents, silica, etc.). Do not absorb with sawdust or other combustible materials. After approximately 1 hour, collect it in a waste container. Do not seal the container (it releases CO₂). Keep it in a moist state and leave it in a secure location in the open air for several days.

6.4 Reference to other sections

Appropriate conduct with waste product – section 13. Appropriate personal protective equipment – section 8.

Section 7: Handling and storage

7.1 Precautions for safe handling

Handle in accordance with good occupational hygiene and safety practices. Avoid contact with eyes and skin. Do not allow product to get into mouth. Do not breathe vapours. Ensure adequate ventilation general or/and local. Work away from sources of heat and fire, do not use sparking tools. Avoid electrostatic discharges.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original, properly labeled and tightly closed containers in dry, cool and well-ventilated place. Keep away from food and beverages. Recommended storage temperature: 10-25 °C. Avoid fire and direct sunlight. Protect from water and moisture. In contact with water, carbon dioxide is formed, which can lead to the bursting of the containers. After opening, seal the container and store in an upright position to prevent leakage.

7.3 Specific end use(s)

Hardener.

Section 8: Exposure controls/personal protection

8.1 Control parameters

Specification	TLV-TWA	TLV-STEL
butyl acetate [CAS 123-86-4]	241 mg/m ³ (50 ppm)	723 mg/m ³ (150 ppm)

* possibility of significant uptake through the skin.

The table above shows the maximum workplace concentration values at the European Union level.

Basis: Commission Directive 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU, 2019/1831/EU.

Please check any national occupational exposure limit values in your country.

Recommended control procedures

Procedures Concerning the control over the dangerous components concentrations in the air and control over the air quality in the workplace - if they are available and Justified for the position - in Accordance with the European Standards, with the conditions within the exposure place and a proper test methodology adapted to the working conditions.

8.2 Exposure controls

Appropriate engineering controls

Use the product in accordance with good occupational hygiene and safety practices. Avoid contact with eyes and skin. Immediately remove contaminated clothing. In the workplace, general and/or local ventilation should be provided in order to keep the concentrations of harmful substances in the air below the permissible concentration limits. When handling do not eat, drink, smoke or take medications. Before break and after work carefully wash hands.

Individual protection measures, such as personal protective equipment

During the selection of appropriate personal protective equipment, the type of hazard posed by the product, the conditions at the workplace and the way of handling the product should be taken into consideration. The used personal protective equipment must meet the requirements of Regulation (EU) 2016/425/UE and the relevant standards.

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The employer is obliged to provide protection measures appropriate to the activities performed and meeting all quality requirements, including their maintenance and cleaning. Any contaminated or damaged personal protective equipment must be replaced immediately.

Hand and body protection

ear protective gloves resistant to chemicals (EN 374) and protective clothing (EN 13688). Recommended glove material: PVC, butyl rubber, nitrile rubber, neoprene, viton.

In case of short-term exposure: recommended gloves with protection class 3 or higher.

In case of prolonged contact: recommended gloves with protection class 5 or higher.

When using protective gloves during work with chemical products, it should be noted that the efficacy levels and corresponding breakthrough times do not indicate actual times of protection at a particular workplace, because the protection can be affected by many factors, e.g. temperature, other substances etc. If there are any signs of degradation, damage or change in appearance (colour, flexibility, shape), it is recommended to replace the gloves with a new pair. Please follow the manufacturer's instructions, not only in terms of gloves' usage, but also in terms of their cleaning, maintenance and storage. It is also important to know how to take off the gloves in order to avoid hands contamination.

Eye protection

Use tightly protective glasses if there is a risk of eye contamination (EN 166).

Respiratory protection

A properly fitted, self-contained breathing apparatus or air filter should be used when a risk assessment indicates this is necessary. The selection of the respiratory mask should be made on the basis of the known or expected level of exposure, the danger of the product and the safety limits of the selected mask. Protection classes (class 1/protection against vapours with a concentration in the air volume not exceeding 0,1 %, class 2/protection against vapours with a concentration in the air not exceeding 0,5 %, class 3/protect against vapours at concentrations in the air volume to 1 %). In cases where the oxygen concentration is ≤ 19 % and/or maximum concentration of toxic substances in the air is $\geq 1,0$ % by volume, isolating equipment should be used.

Thermal hazards

Do not occur.

Environmental exposure controls

Prevent direct runoff into drains/surface waters. Do not contaminate surface waters and drainage ditches with chemicals or used packaging. Any spill or uncontrolled spills into surface water should be reported to the appropriate authorities in accordance with national and local regulations. Export as chemical waste in accordance with national and local regulations.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state:	liquid
Colour:	colorless to pale yellow
Odour	characteristic, solvent-like.
Melting point/freezing point:	not determined
Boiling point or initial boiling point and boiling range:	127 °C (DIN 53173)
Flammability:	flammable product
Lower and upper explosion limit:	1,2 % vol. / 7,5 % vol.
Flash point:	34 °C (DIN EN ISO 2719)
Auto-ignition temperature:	approx. 415 °C
Decomposition temperature:	not determined
pH:	not determined
Kinematic viscosity (40 °C):	not determined
Solubility:	product reacts with water
Partition coefficient n-octanol/water (log value):	not determined
Vapour pressure:	approx. 12 hPa (20 °C, butyl acetate)

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Density and/or relative density: approx. 1,06 g/cm³ (23 °C)
Relative vapour density: not determined
Particle characteristics: not applicable

9.2 Other information

Dynamic viscosity: approx. 600 mPa·s (23 °C)

Section 10: Stability and reactivity

10.1 Reactivity

Product is reactive. It can polymerize with the increase of temperature. See also subsections 10.3-10.5.

10.2 Chemical stability

The product is stable under normal conditions of use and storage.

10.3 Possibility of hazardous reactions

In contact with water, it reacts with the release of carbon dioxide. Strong reaction with all groups of compounds containing active hydrogen, such as alcohols, amines, acids, bases, while releasing large amounts of heat.

10.4 Conditions to avoid

Avoid sources of heat and fire, direct sunlight. Protect from moisture.

10.5 Incompatible materials

Avoid contact with water, strong oxidants, acids, bases, copper, amines, alcohols.

10.6 Hazardous decomposition products

Under proper use and storage of the product there are no hazardous decomposition products.

Section 11: Toxicological information

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

Toxicity of components

butyl acetate [CAS 123-86-4]

LD₅₀ (oral, rat) > 8800 mg/kg
LC₅₀ (inhalation, rat) > 21 mg/m³/4 h

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate homopolymer, isocyanurate type [CAS 53880-05-0]

LD₅₀ (oral, rat) > 14000 mg/kg
LC₅₀ (inhalation, rat) > 5 mg/dm³/4 h (OECD 403)

Toxicity of mixture

Information regarding acute and/or delayed results of the exposure was defined on the basis of the information on product's classification and/or toxicological studies as well as the experience and knowledge of the manufacturer.

Acute toxicity

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

Skin corrosion/irritation

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

Serious eye damage/irritation

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

Respiratory or skin sensitisation

May cause an allergic skin reaction.

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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

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

STOT-single exposure

May cause respiratory irritation. May cause drowsiness or dizziness.

STOT-repeated exposure

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

Aspiration hazard

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

Information on likely routes of exposure

Routes of exposure: skin contact, eye contact, inhalation, ingestion. For more information – see subsection 4.2.

Symptoms related to physical, chemical and toxicological properties

See subsection 4.2.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

See subsection 4.2.

11.2 Information on other hazards

Endocrine disrupting properties

The product does not contain substances included in the list established in accordance with Article 59(1) for having endocrine disrupting properties, or substances identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 (3) or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 % by weight.

Other information

Not known.

Section 12: Ecological information

12.1 Toxicity

Toxicity of components

butyl acetate [CAS 123-86-4]

Toxicity for fish (<i>Leuciscus idus</i>)	LC ₅₀	62 mg/l/96 h
Toxicity for Daphnia (<i>Daphnia magna</i>)	EC ₅₀	73 mg/l/24 h
Toxicity for algae (<i>Scenedesmus subspicatus</i>)	LC ₅₀	675 mg/l/72 h
Toxicity for bacteria (<i>Pseudomonas putida</i>)	EC ₁₀	115 mg/l/16 h

Toxicity of mixture

Product is not classified as hazardous for the aquatic environment.

12.2 Persistence and degradability

Product is feebly biodegradable.

12.3 Bioaccumulative potential

Bioaccumulation is not expected.

12.4 Mobility in soil

The product is heavier than water and falls to the bottom where it reacts at the interface. As a result of the reaction, a chemically inert, non-biodegradable solid substance is created.

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12.5 Results of PBT and vPvB assessment

Components do not meet the PBT or vPvB criteria.

12.6 Endocrine disrupting properties

The product does not contain substances included in the list established in accordance with Article 59(1) for having endocrine disrupting properties, or substances identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 (3) or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 % by weight.

12.7 Other adverse effects

This product has no influence on the global warming or the ozone layer depletion.

Section 13: Disposal considerations

13.1 Waste treatment methods

Disposal methods for the mixture: the waste product should be recycled or disposed of in authorized incineration plants or waste treatment/disposal plants in accordance with applicable regulations. Do not empty into drains. Store residues in original containers. Waste code should be given in the place of waste formation.

Disposal methods for used packing: recover / recycle / eliminate packaging waste in accordance with applicable regulations. Reusable packaging can be further used after cleaning.

Legal basis: Directive 2008/98/EC as amended and 94/62/EC as amended.

Section 14: Transport information

14.1 UN number or ID number

UN 1866

14.2 UN proper shipping name

RESIN SOLUTION

14.3 Transport hazard class(es)

3

14.4 Packing group

III

14.5 Environmental hazards

Product is not hazardous for environment in accordance with transport regulations.

14.6 Special precautions for user

When handling the cargo use personal protective equipment in accordance with section 8. Avoid sources of ignition.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable.

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 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a 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.

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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, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (Text with EEA relevance) as amended.

Commission Regulation (EU) No 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).

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives as amended.

European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste as amended.

Regulation (EU) No 2016/425 of the European Parliament and of the Council of 9 March 2016 on personal protective equipment and repealing Council Directive 89/686/EEC.

Commission Directive 2000/39/EC of 8 June 2000 establishing a first list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Commission Directive 2006/15/EC of 7 February 2006 establishing a second list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Directives 91/322/EEC and 2000/39/EC.

Commission Directive 2009/161/EU of 17 December 2009 establishing a third list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Commission Directive 2000/39/EC.

Commission Directive 2017/164/EU of 31 January 2017 establishing a fourth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC, and amending Commission Directives 91/322/EEC, 2000/39/EC and 2009/161/EU.

Commission Directive 2019/1831/EU of 24 October 2019 establishing a fifth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC and amending Commission Directive 2000/39/EC.

Annex XVII of REACH:

4,4'-methylenediphenyl diisocyanate [CAS 101-68-8]

15.2 Chemical safety assessment

Chemical safety assessment is not required for mixtures.

Section 16: Other information

Full text of indicated H- phrases mentioned in section 3

H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.

Explanation of abbreviations and acronyms

Aquatic Chronic 2	Hazardous to the aquatic environment category 2
Acute Tox. 3	Acute Toxicity category 3
Eye Irrit. 2	Eye irritation category 2
Flam. Liq. 3	Flammable liquid category 3
Resp. Sens. 1	Respiratory sensation category 1
Skin Irrit. 2	Skin irritation category 2
Skin Sens. 1	Skin sensation category 1
STOT SE 3	Specific Target Organ Toxicity – single exposure, category 3
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
PBT	Persistent, Bioaccumulative and Toxic substance
vPvB	very Persistent, very Bioaccumulative substance

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Trainings

Before commencing working with the product, the user should learn the Health & Safety regulations, regarding handling chemicals, and in particular, undergo proper workplace training. Personnel related with the transport of hazardous substances in accordance with the ADR agreement should be trained and should obtain proper certification in a range of their obligations (general training, workplace training, safety training).

Key literature references and data sources

This SDS was prepared on the basis of the SDS of the individual components, literature data, online databases (e.g. ECHA, TOXNET, COSING) as well as our knowledge and experience, taking into account current legislation.

Classification and procedures used to classify the mixture

Classification was based on data on content of hazardous substances using calculation method under the guidance of Regulation 1272/2008/EC (CLP) as amended.

Other data

Safety Data Sheet made by: **THETA Consulting Sp. z o.o.** (based on the manufacturer's data)

The information above is based on a current available data concerning the product, but also on the experience and knowledge in this field of the producer. They are neither a quality description of the product nor a guarantee of particular features. They are to be treated as aid to safety in transport, storage and usage of the product. That does not free the user from the responsibility of improper usage of the information above and also of improper compliance with the law norms in the field.