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 110 COMPONENT B**

UFI: 1U20-N0K2-M009-N76P

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

Relevant identified uses: filler for closing pores in mats from rubber granules.

Uses advised against: not determinate.

1.3 Details of the supplier of the safety data sheet

Manufacturer: **BSG Sp. z o. o.**

Address: ul. 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

Skin Irrit. 2 H315, **Skin Sens. 1** H317, **Eye Irrit. 2** H319, **Resp. Sens. 1** H334, **STOT SE 3** H335, **Carc. 2** H351, **STOT RE 2** H373

Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. Suspected of causing cancer. May cause damage to organs through prolonged or repeated exposure if inhaled.

2.2 Label elements

Hazard pictograms and signal words

DANGER

Names of dangerous components placed on label:

Contains: isocyanic acid, polymethylenepolyphenylene ester (PMDI); 4,4'-methylenediphenyl diisocyanate.

Hazard statements

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
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 if inhaled.

Precautionary statements

P201	Obtain special instructions before use.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	In case of inadequate ventilation wear respiratory protection.
P302+P352	IF ON SKIN: Wash with plenty of water.

P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P501	Dispose of contents/container to properly labeled containers for selective waste collection emptied by an authorised company.

Additional information

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 reacts with water with emission of carbon dioxide which can burst sealed containers. At higher temperatures the reaction is accelerated.

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

isocyanic acid, polymethylenepolyphenylene ester (PMDI)

Concentration range:	< 20 %
CAS number:	9016-87-9
EC number:	polymer
Index number:	-
Registration number:	-
Classification:	Skin Irrit. 2 H315, Skin Sens. 1 H317, Eye Irrit. 2 H319, Acute Tox. 4 H332, Resp. Sens. 1 H334, STOT SE 3 H335, Carc. 2 H351, STOT RE 2 H373

4,4'-methylenediphenyl diisocyanate

Concentration range:	< 8 %
CAS number:	101-68-8
EC number:	202-966-0
Index number:	615-005-00-9
Registration number:	-
Classification:	Skin Irrit. 2 H315, Skin Sens. 1 H317, Eye Irrit. 2 H319, Acute Tox. 4 H332, Resp. Sens. 1 H334, STOT SE 3 H335, Carc. 2 H351, STOT RE 2 H373
	Specific concentration limits:
	STOT SE 3 H335: C ≥ 5 %
	Skin Irrit. 2 H315: C ≥ 5 %
	Resp. Sens. 1 H334: C ≥ 0,1 %
	Eye Irrit. 2 H319: C ≥ 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 area with plenty of water. In case of irritation consult a doctor. Studies on the MDI indicated that detergents based on polyglycols or corn oil may be more effective than water and soap.

Eye contact: consult an ophthalmologist 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. In case of breathing difficulties give oxygen.

4.2 Most import ant symptoms and effects, both acute and delayed

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

Eye contact: redness, tearing, burning, irritation.

After ingestion: possible abdominal pain, nausea, vomiting, irritation of the gastrointestinal system.

After inhalation: respiratory tract irritation, coughing, breathing difficulties, dyspnoea, asthmatic symptoms, pulmonary edema.

Exposure effects: may cause cancer, may cause damage to organs through prolonged or repeated exposure if inhaled.

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: CO_2, extinguishing powder, extinguishing foam.

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

5.2 Special hazards arising from the substance or mixture

During combustion irritant and harmful vapours and gases: carbon oxides, nitrogen oxides, hydrocarbons, isocyanate vapours and hydrogen cyanide may be released. 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

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. In case of fire, cool endangered containers with water spray from a safe distance. Do not allow extinguishing water enter drains, surface water and groundwater.

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 release of large amounts of the product, isolate the exposed area. Use personal protective equipment. Avoid skin and eyes contamination. Ensure adequate ventilation. Do not breathe vapours.

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.

6.3 Methods and material for containment and cleaning up

Collect the product in liquid form using liquid-absorbing materials (eg sand, earth, universal binders, silica, etc.). Do not absorb with sawdust or other combustible materials. Allow to finish reaction for at least 30 minutes and place in waste containers for neutralisation (decontamination). Clean and ventilate the contaminated area well.

Cleansing:

If necessary use the cleaning liquid:

Cleaner 1: 5-10 % of sodium carbonate, 0.2-2 % of liquid detergent, fill up to 100 % with water.

Cleaner 2: 3-8 % of concentrated ammonia solution, 0.2-2 % of liquid detergent, fill up to 100 % with water.

6.4 Reference to other sections

Appropriate conduct with waste product – see section 13.
Appropriate personal protective equipment – see 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 breathe vapours. Ensure adequate ventilation general or/and local. Use personal protective equipment. Susceptible people who suffer from asthma or bronchial hyperreactivity should not work with this product.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original, properly labeled and tightly closed containers in a dry, cool and well-ventilated place. Keep away from food, beverages, animal feed. Recommended storage temperature: below 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. Do not store in unlabeled containers. Unsuitable materials for storage containers: copper, copper alloys and galvanized surfaces.

7.3 Specific end use(s)

No information on applications other than those mentioned in subsection 1.2.

Section 8: Exposure controls/personal protection

8.1 Control parameters

Product does not contain components with occupational exposure limit values established on 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.

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 wash hands carefully.

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. 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

Wear protective gloves resistant to chemicals (EN 374). 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.

The material that the gloves are made of must be impenetrable and resistant to the product's effects. The selection of material must be performed with consideration of breakthrough time, penetration speed and degradation. Moreover, the selection of proper gloves depends not only on the material, but also on other quality features and changes depending on the manufacturer. The producer should provide detailed information regarding the exact breakthrough time. This information should be followed.

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 ≥ 1,0 % by volume, isolating equipment should be used.

Thermal hazards

Wear thermal protective gloves when working with hot product. If there is a risk of eye contamination with hot, molten product, use tightly fitting protective glasses in accordance with EN 166.

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:	brown
Odour	characteristic
Melting point/freezing point:	not determined
Boiling point or initial boiling point and boiling range:	> 200 °C
Flammability:	non-flammable product
Lower and upper explosion limit:	not determined
Flash point:	> 170 °C (open cup)
Auto-ignition temperature:	not determined
Decomposition temperature:	not determined
pH:	not determined
Kinematic viscosity:	not determined
Solubility:	soluble in aromatic hydrocarbons, ethers, esters, ketones
Partition coefficient n-octanol/water (log value):	not determined
Vapour pressure:	not determined
Density and/or relative density (25 °C):	1,23 g/cm^3
Relative vapour density:	not determined
Particle characteristics:	not applicable

9.2 Other information

Dynamic viscosity (25 °C): 300 ± 50 mPa·s

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

Isomers and other forms of MDI are unstable in DMSO (dimethyl sulfoxide), additionally presence of water (moisture) leads to decomposition of MDI. Higher stability is shown in EGDE (1,2-dimethoxyethane).

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, direct sunlight. Protect from water and moisture.

10.5 Incompatible materials

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

Information on the acute and/or delayed effects of exposure have been identified on the basis of information on product classification and/or toxicological studies, as well as the experience and knowledge of the manufacturer.

Acute toxicity

ATE_{mix} (vapour inhalation) > 20 mg/l

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

The acute toxicity estimate (ATE_{mix}) was determined using the appropriate conversion value from Table 3.1.2 in Annex I to CLP as amended.

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/irritation

Causes serious eye irritation.

Respiratory or skin sensitisation

May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Germ cell mutagenicity

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

Carcinogenicity

Suspected of causing cancer.

Reproductive toxicity

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

STOT-single exposure

May cause respiratory irritation.

STOT-repeated exposure

May cause damage to organs through prolonged or repeated exposure if inhaled.

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

High concentrations can cause headache, dizziness and nausea. Prolonged or repeated skin contact may cause hypersensitivity. Prolonged or repeated inhalation exposure may cause asthma. Susceptible individuals who suffer from asthma or bronchial hyper-reactivity should not work with this product. Breathing symptoms may occur within several hours after exposure.

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 applicable.

Section 12: Ecological information

12.1 Toxicity

Product is not classified as hazardous for the aquatic environment.

12.2 Persistence and degradability

Polymeric MDI is not biodegradable.

Biodegradation	< 10%/28 days (OECD 302C)

MDI isomers undergo hydrolysis in aqueous environment. They have hydrophobic properties and are hardly soluble in water. Heterogenic reaction with water or soil is relatively slow.

MDI reacts with water with emission of polyurea.

Oxygen fotochemical degradation:	DT50 = 22h (for MDI)
Half-life period in water:	DT50 = 20h/25oC (for MDI)

12.3 Bioaccumulative potential

log P_{ow} = 4,51 (for MDI)

12.4 Mobility in soil

Product reacts with water. As a result of the reaction, a chemically inert, non-biodegradable solid substance is created. Product is adsorbing in soil and has low mobility.

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. Waste code should be given in the place of waste formation.

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

Not applicable, product is not dangerous during transport by see, land or air.

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

Not applicable

14.6 Special precautions for user

Not applicable.

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.

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

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.

Explanation of abbreviations and acronyms

Acute Tox. 4	Acute Toxicity category 4
Carc. 2	Carcinogenic category 2
Eye Irrit. 2	Eye irritation category 2
Resp. Sens.1	Respiratory sensation category 1
Skin Irrit. 2	Skin irritation category 2
Skin Sens. 1	Skin sensation category 1
STOT RE 2	Specific Target Organ Toxicity – repeated exposure category 2
STOT SE 3	Specific Target Organ Toxicity – single exposure category 3
DNEL	Derived No Effect Level.
PNEC	Predicted No Effect Concentration
PBT	Persistent, Bioaccumulative and Toxic substance
vPvB	very Persistent, very Bioaccumulative substance

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.

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

Changes: section 1-16

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.