

# Raise3D Premium TPU-95A Safety Data Sheet

Prepared in accordance with Regulation (EC) No 1907/2006 (REACH), as amended by Regulation (EU) 2020/878, and Regulation (EC) No 1272/2008 (CLP).

## Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

### 1.1 Product identifier

Raise3D Premium TPU-95A 3D Printing Filament

UFI: Not applicable. The product is not classified as a hazardous mixture based on available information.

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

Identified use: 3D printing filament.

Uses advised against: No specific uses advised against have been identified when the product is used as intended.

### 1.3 Details of the supplier of the safety data sheet

**Supplier:**

Raise 3D Technologies, Inc.

**Address:**

13310 Pike Road, Stafford, TX 77477

**Manufacturing site:**

Building A1, Huanghai Road, Tongzhou District, Nantong City, Jiangsu Prov. China 226300

### 1.4 Emergency telephone number

In case of medical emergency, contact a physician or local poison centre immediately.

Emergency phone number (China): +86-021-65337855

Contact person / e-mail: Dr. Jin (minde.jin@raise3d.com)

**Emergency contact information from Raise3D USA:**

*United States*

13310 Pike Road, Stafford, TX 77477

Tel: +1 888 963 9028

## Section 2: HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

Not classified according to Regulation (EC) No. 1272/2008 [CLP].

## 2.2 Label elements

No hazard pictogram, signal word, hazard statement or precautionary statement is required according to Regulation (EC) No. 1272/2008 [CLP].

## 2.3 Other hazards

This mixture does not contain substances meeting the criteria for PBT or vPvB at concentrations of 0.1 % or higher, based on available information. Based on available information, the mixture does not contain substances identified as having endocrine-disrupting properties for human health or for the environment at concentrations of 0.1 % or higher.

During thermal processing or overheating, decomposition fumes may be generated. Avoid inhalation of fumes and vapours.

## Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Type of product: **Mixture**

### 3.1 Substances

Not applicable. The product is a mixture.

### 3.2 Mixtures

Thermoplastic polyurethane (TPU)

#### Hazardous components:

Bis(2,6-diisopropylphenyl) carbodiimide

Concentration [wt.-%]:  $\geq 0.1$  -  $< 0.3$

EC-No.: 218-487-5

REACH Registration Number: 01-2119958154-35-0002

CAS-No.: 2162-74-5

Classification (Regulation (EC) No. 1272/2008): Acute Tox. 4 (Oral), H302; Repr. 1B, H360F; STOT RE 1, H372 (gastrointestinal system)

#### Candidate List of Substances of Very High Concern for Authorisation

This product contains no substances of very high concern in concentrations where an information obligation applies (REACH Regulation (EC) No. 1907/2006, Article 59).

## Section 4: FIRST AID MEASURES

### 4.1 Description of first aid measures

General advice: If symptoms develop or persist, seek medical advice. Show this safety data sheet to the physician where possible.

Inhalation: Move the person to fresh air and keep at rest. If respiratory irritation, coughing or breathing difficulty occurs after inhalation of thermal processing fumes, seek medical attention.

Skin contact: For contact with molten material, cool immediately with plenty of water. Do not remove solidified material from the skin. Seek immediate medical advice for burns. For contact with product at room temperature, wash thoroughly with soap and water.

Eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical advice if irritation persists.

Ingestion: Rinse mouth. Do not induce vomiting unless directed by medical personnel. Seek medical advice if discomfort occurs.

#### **4.2 Most important symptoms and effects, both acute and delayed**

Most important symptoms and effects, both acute and delayed: Contact with molten material may cause thermal burns. Dust or thermal processing fumes may irritate the eyes, skin and respiratory tract.

#### **4.3 Indication of any immediate medical attention and special treatment needed**

Immediate medical attention / special treatment: Treat symptomatically. Burns from molten polymer require prompt medical attention.

### **Section 5: FIREFIGHTING MEASURES**

#### **5.1 Extinguishing media**

Suitable extinguishing media: Water spray, foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media:

No specific unsuitable extinguishing media are known based on available information.

#### **5.2 Special hazards arising from the substance or mixture**

Burning releases carbon monoxide, carbon dioxide, oxides of nitrogen and traces of hydrogen cyanide. In the event of fire and/or explosion do not breathe fumes.

#### **5.3 Advice for fire fighters**

Fire fighters must wear self-contained breathing apparatus and suitable protective clothing.

Do not allow contaminated extinguishing water to enter the soil, ground-water or surface waters.

### **Section 6: ACCIDENTAL RELEASE MEASURES**

#### **6.1 Personal precautions, protective equipment and emergency procedures**

Wear suitable personal protective equipment (see Section 8). Ensure adequate ventilation. Spilled material may create a slip or trip hazard. Keep unprotected persons away.

#### **6.2 Environmental precautions**

Prevent further release where safe to do so. Do not allow material to enter drains, surface waters, wastewater systems or soil.

### 6.3 Methods and materials for containment and cleaning up

Collect mechanically and place in suitable, labelled containers for reuse or disposal. Avoid generating dust from cutting, grinding or damaged material.

### 6.4 Reference to other sections

For personal protective equipment see Section 8. For disposal considerations see Section 13.

## Section 7: HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Provide adequate ventilation and, where needed, local exhaust ventilation during printing, hot-end operation and any other thermal processing.

Under recommended processing conditions, limited fumes may be generated. Avoid breathing fumes or vapours released by overheating.

When the product is cut, ground or otherwise mechanically processed, control any dust with effective exhaust ventilation.

Keep away from food, beverages and tobacco. Wash hands after handling. Remove contaminated clothing before reuse.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep containers tightly closed, dry and protected from direct sunlight and moisture.

Storage class (TRGS 510): 11 - Combustible solids

Recommended storage temperature: < 40 °C

## Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

UK Workplace Exposure Limits (WEL), per EH40 document (Health & Safety Executive). If no UK value exists, EU exposure limits given where available.

### 8.1 Control parameters:

The regulations for the substances listed below must be observed when processing this product, particularly if processing takes place at elevated temperatures. In our experience the provision of effective fresh-air and exhaust ventilation equipment at the points where vapors may be generated will ensure compliance with the tolerance limits quoted below.

Substance	CAS-No.	Basis	Type	Value	Ceiling Limit Value	Remarks
Isocyanates (all, as -NCO)		EH40 WEL	STEL	0.07 mg/m <sup>3</sup>		measured as NCO
Isocyanates (all, as -NCO)		EH40 WEL	TWA	0.02 mg/m <sup>3</sup>		measured as NCO

Isocyanates (all, as -NCO)		EH40 WEL			Listed., measured as NCO
General limiting value of dust		EH40 WEL	TWA	10 mg/m <sup>3</sup>	inhalable fraction
General limiting value of dust		EH40 WEL	TWA	4 mg/m <sup>3</sup>	alveolar fraction

**Derived No Effect Level (DNEL)****Bis(2,6-diisopropylphenyl) carbodiimide**

Value type	Route of exposure	Health Effects	Value	Remarks
Workers	Inhalation	Long-term systemic effects	0.094 mg/m <sup>3</sup>	Most sensitive endpoint: Repeated dose toxicity oral
Workers	Inhalation	Acute systemic effects		Hazard unknown (no further information necessary)
Workers	Inhalation	Long-term local effects		Hazard unknown (no further information necessary)
Workers	Inhalation	Acute local effects		Hazard unknown (no further information necessary)
Workers	Dermal	Long-term systemic effects	0.013 mg/kg bw/day	Most sensitive endpoint: Repeated dose toxicity oral
Workers	Dermal	Acute systemic effects		No hazard identified
Workers	Dermal	Long-term local effects		No hazard identified
Workers	Dermal	Acute local effects		No hazard identified
Workers	Eye contact	Local effects		Low hazard (no threshold derived)
Consumers	Inhalation	Long-term systemic effects	0.023 mg/m <sup>3</sup>	Most sensitive endpoint: Repeated dose toxicity oral
Consumers	Inhalation	Acute systemic effects		Hazard unknown (no further information necessary)
Consumers	Inhalation	Long-term local effects		Hazard unknown (no further information necessary)
Consumers	Inhalation	Acute local effects		Hazard unknown (no further information necessary)
Consumers	Dermal	Long-term systemic effects	0.007 mg/kg bw/day	Most sensitive endpoint: Repeated dose toxicity oral
Consumers	Dermal	Acute systemic effects	20 mg/kg bw/day	Most sensitive endpoint: Acute toxicity oral

Consumers	Dermal	Long-term local effects		No hazard identified
Consumers	Dermal	Acute local effects		No hazard identified
Consumers	Oral	Long-term systemic effects	0.007 mg/kg bw/day	Most sensitive endpoint: Repeated dose toxicity oral
Consumers	Oral	Acute systemic effects	0.021 mg/kg bw/day	Most sensitive endpoint: Repeated dose toxicity

### Predicted No Effect Concentration (PNEC)

#### Bis(2,6-diisopropylphenyl) carbodiimide

Compartment	Value	Remarks
Fresh water	0.0001 mg/l	
Fresh water sediment	5.461 mg/kg	dry weight
Marine water	0.00001 mg/l	
Marine sediment		Exposure of the sediment is not expected.
Sewage treatment plant	10 mg/l	
Air		No hazard identified
Soil	4.445 mg/kg	dry weight
Oral		Does not bioaccumulate.
Intermittent use/release	0.001 mg /l	

## 8.2 Exposure controls

### Respiratory protection

If dust or fumes are generated, use appropriate respiratory protection, e.g. particle filter P1 according to EN 143 and/or suitable protection against organic vapours depending on the processing conditions.

### Hand protection

Suitable materials for safety gloves; EN 374:

Suitable materials for safety gloves; EN 374: PVC ( $\geq 0.5$  mm) or equivalent protective gloves suitable for the task.

Contaminated and/or damaged gloves must be changed.

### Eye protection

Wear safety glasses with side shields or other appropriate eye/face protection.

### Skin and body protection

Wear suitable protective clothing.

### Further protective measures

Do not breathe dust, fumes or vapours. Wash thoroughly after handling. Use good industrial hygiene practice.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Property	Value
Physical state	Solid filament.
Colour	Natural, white, black.
Odour	Almost odourless.
Melting point / freezing point	No specific test data available for the mixture; softening begins above 120 °C.
Boiling point or initial boiling point and boiling range	Not applicable; the product is a solid polymer and is expected to decompose before boiling.
Flammability	Combustible solid; not classified as a flammable solid based on available information.
Lower and upper explosion limit	Not applicable for the product in solid filament form.
Flash point	Not applicable for solid filament.
Auto-ignition temperature	No specific test data available for the mixture.
Decomposition temperature	Approx. 230 °C.
pH	Not applicable; the product is a non-aqueous solid.
Kinematic viscosity	Not applicable; the product is a solid.
Solubility	Practically insoluble in water.
Partition coefficient n-octanol/water (log Kow)	No test data available for the mixture.
Vapour pressure	Negligible / not applicable at ambient temperature for a solid polymer.
Density	Approx. 1.2 g/cm <sup>3</sup> .
Relative vapour density	Not applicable; the product is a solid.
Particle characteristics	Supplied as filament; respirable particles are not expected in the supplied form.
Softening point	> 120 °C.
Ignition temperature	> 210 °C.
Bulk density	Not applicable to the product in continuous filament form.
Evaporation rate	Not applicable; the product is a solid.
Explosive properties	The product is not expected to present an explosion hazard in the supplied form; processing dust may form an explosive mixture with air under exceptional conditions.

### 9.2 Other information

Other information	Details
Oxidising properties	Not oxidising based on available information.
Surface tension	Not applicable; the product is a solid.
Dynamic viscosity	Not applicable; the product is a solid.
Heat of combustion	No test data available for the mixture.
Note	The values above are intended for safety assessment and do not represent a product specification.

## Section 10: STABILITY AND REACTIVITY

### 10.1 Reactivity

No dangerous reactivity is expected under normal conditions of storage and use.

### 10.2 Chemical stability

Stable under recommended storage and handling conditions. Thermal decomposition begins at approximately 230 °C.

### 10.3 Possibility of hazardous reactions:

No hazardous reactions are expected under normal conditions of use.

### 10.4 Conditions to avoid:

Avoid excessive heat, open flames and overheating above recommended processing temperatures.

### 10.5 Incompatible materials:

No specific incompatible materials are known based on available information. Avoid contact with strong oxidising agents.

### 10.6 Hazardous decomposition products

Smouldering or incomplete combustion may generate carbon monoxide, carbon dioxide, nitrogen oxides and traces of hydrogen cyanide.

Small quantities of isocyanate-containing decomposition products may be released when the product is exposed to elevated temperatures (for example during drying, extrusion or printing).

It is primarily a matter of diisopropylphenyl isocyanate.

Exceeding the recommended processing temperatures may significantly increase the amount of fumes and isocyanate vapours generated.

Over-exposure may cause concentration-dependent respiratory irritation and, in susceptible persons, delayed breathing difficulties, coughing or asthma-like symptoms.

Hypersensitive persons may suffer from these effects even at low isocyanate concentrations.

The regulations for the substances listed below must be observed when processing this product, particularly if processing takes place at elevated temperatures.

Isocyanates (all, as -NCO)

2,6-diisopropyl-phenylisocyanate

EC-No.: 248-885-4

CAS-No.: 28178-42-9

Classification (1272/2008/CE): Acute Tox. 4 Oral H302 Acute Tox. 1 Inhalative H330 Skin Corr. 1B

H314 Eye Dam. 1 H318 Resp. Sens. 1 H334 STOT SE 3 H335

## Section 11: TOXICOLOGICAL INFORMATION

Toxicological studies on the product are not yet available.

Please find below the data available to us:

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

#### Acute toxicity, oral

Thermoplastic polyurethane

LD50 rat: > 5,000 mg/kg

Method: OECD Test Guideline 423

Studies of a comparable product.

LD50 rat, female: > 300 - < 2,000 mg/kg

Method: OECD Test Guideline 423

Assessment: Harmful if swallowed.

#### Acute toxicity, dermal

Thermoplastic polyurethane

LD50 rat: > 2,000 mg/kg

Studies of a comparable product.

Bis(2,6-diisopropylphenyl) carbodiimide

LD50 rat, male/female: > 2,000 mg/kg

Method: OECD Test Guideline 402

#### Acute toxicity, inhalation

Thermoplastic polyurethane

Assessment: The substance or mixture has no acute inhalation toxicity

Studies of a comparable product.

Bis(2,6-diisopropylphenyl) carbodiimide

Not a relevant route of exposure

#### Primary skin irritation

Thermoplastic polyurethane

Species: rabbit

Result: non-irritant

Classification: No skin irritation

Method: OECD Test Guideline 404

Studies of a comparable product.

Bis(2,6-diisopropylphenyl) carbodiimide

Species: rabbit

Result: non-irritant

Classification: No skin irritation

Method: OECD Test Guideline 404

#### **Primary mucosae irritation**

Thermoplastic polyurethane

Species: rabbit

Result: non-irritant

Classification: No eye irritation

Studies of a comparable product.

Bis(2,6-diisopropylphenyl) carbodiimide

Species: rabbit

Result: slight irritant

Classification: No eye irritation

Method: OECD Test Guideline 405

#### **Effect on the respiratory tract:**

no data available.

#### **Sensitisation**

Thermoplastic polyurethane

##### **Skin sensitisation according to Magnusson/Kligmann (maximizing test):**

Species: Guinea pig

Result: negative

Classification: Does not cause skin sensitization.

Method: OECD Test Guideline 406

Studies of a comparable product.

Bis(2,6-diisopropylphenyl) carbodiimide

##### **Skin sensitisation according to Magnusson/Kligmann (maximizing test):**

Species: Guinea pig

Result: negative

Classification: Does not cause skin sensitization.

Method: OECD Test Guideline 406

Respiratory sensitization

No data available.

#### **Subacute, subchronic and prolonged toxicity**

Thermoplastic polyurethane No data available.

Bis(2,6-diisopropylphenyl) carbodiimide NOAEL: 4 mg/kg

LOAEL (Lowest observable adverse effect level): 16 mg/kg

Application Route: Oral

Species: rat, male/female

Dose Levels: 0 - 1 - 4 - 16 mg/kg

Exposure duration: 28 d

Target Organs: Blood, White blood cells, Lymphatic System, Gastro-intestinal system, Kidney

Assessment: Causes damage to organs through prolonged or repeated exposure.

Method: OECD Test Guideline 407

### **Carcinogenicity**

Thermoplastic polyurethane No data available.

Bis(2,6-diisopropylphenyl) carbodiimide No data available.

### **Reproductive toxicity/Fertility**

Thermoplastic polyurethane No data available.

Bis(2,6-diisopropylphenyl) carbodiimide

NOAEL - Parents: 3 mg/kg

NOAEL (parents, fertility): 1 mg/kg

Species: rat, male/female

Application Route: Oral

Dose Levels: 0 - 1 - 3 - 8 (5) mg/kg

Method: OECD Test Guideline 421 May impair fertility.

### **Reproductive toxicity/Developmental Toxicity/Teratogenicity**

Thermoplastic polyurethane No data available.

Bis(2,6-diisopropylphenyl) carbodiimide

NOAEL (teratogenicity): 1 mg/kg

Species: rat

Application Route: Oral

Dose Levels: 0 - 1 - 3 - 8 (5) mg/kg

Method: OECD Test Guideline 421

### **Genotoxicity in vitro**

Thermoplastic polyurethane

Test type: Salmonella/microsome test (Ames test)

Result: No indication of mutagenic effects.

Method: OECD Test Guideline 471

Studies of a comparable product.

Bis(2,6-diisopropylphenyl) carbodiimide

Test type: Salmonella/microsome test (Ames test)

Test system: Salmonella typhimurium

Metabolic activation: with/without

Result: negative

Method: OECD Test Guideline 471

Test type: In vitro mammalian cell gene mutation test

Test system: Chinese hamster V79 cell line Metabolic activation: with/without

Result: negative

Method: OECD Test Guideline 476

Test type: Chromosome aberration test in vitro

Test system: Chinese hamster V79 cell line

Metabolic activation: with/without

Result: negative

Method: OECD Test Guideline 473

### Genotoxicity in vivo

Thermoplastic polyurethane No data available.

Bis(2,6-diisopropylphenyl) carbodiimide No data available.

### STOT evaluation – one-time exposure

Thermoplastic polyurethane

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

Bis(2,6-diisopropylphenyl) carbodiimide

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

### STOT evaluation – repeated exposure

Thermoplastic polyurethane No data available

Bis(2,6-diisopropylphenyl) carbodiimide

Target Organs: Cardiac, White blood cells, Lymphatic System, Gastro-intestinal system, Kidney

Causes damage to organs through prolonged or repeated exposure.

### Aspiration toxicity

Thermoplastic polyurethane No data available.

Bis(2,6-diisopropylphenyl) carbodiimide

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

### CMR Assessment

Thermoplastic polyurethane

Carcinogenicity: No data available.

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

Teratogenicity: No data available.

Reproductive toxicity/Fertility: No data available.

Bis(2,6-diisopropylphenyl) carbodiimide

Carcinogenicity: No data available.

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

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

Reproductive toxicity/Fertility: May damage fertility (Repr. 1B).

### Toxicology Assessment

Bis(2,6-diisopropylphenyl) carbodiimide

Acute effects: Harmful if swallowed.

Sensitization: Based on available data, the classification criteria are not met

## 11.2 Information on other hazards

Endocrine disrupting properties: Based on available information, the mixture does not contain substances identified as having endocrine-disrupting properties for human health at concentrations of 0.1 % or higher.

## Section 12: ECOLOGICAL INFORMATION

Ecotoxicological studies of the product are not available.

Do not allow to escape into waterways, waste water or soil.

**Please find below the data available to us:**

### 12.1 Toxicity Acute Fish toxicity

Thermoplastic polyurethane

EC50 > 100 mg/l

Species: Danio rerio (zebra fish)

Exposure duration: 96 h

Method: Tested according to Directive 92/69/EEC.

Studies of a comparable product.

Bis(2,6-diisopropylphenyl) carbodiimide

Species: Oncorhynchus mykiss (rainbow trout)

Exposure duration: 96 h

Method: OECD Test Guideline 203

No toxic effects in the water-soluble range.

#### Acute toxicity for daphnia

Thermoplastic polyurethane

EC50 > 100 mg/l

Species: Daphnia magna (Water flea)

Exposure duration: 48 h

Method: Tested according to Directive 92/69/EEC.

Studies of a comparable product.

Bis(2,6-diisopropylphenyl) carbodiimide > 1 mg/l

Species: Daphnia magna (Water flea)

Exposure duration: 48 h

Method: OECD Test Guideline 202

No toxic effects in the water-soluble range.

#### **Chronic toxicity to daphnia**

Thermoplastic polyurethane No data available.

#### **Acute toxicity for algae**

Thermoplastic polyurethane

endpoint: Growth inhibition

Species: scenedesmus subspicatus

Exposure duration: 72 h

Method: OECD Test Guideline 201

No toxic effects with saturated solution.

Studies of a comparable product.

Bis(2,6-diisopropylphenyl) carbodiimide

Test type: Growth inhibition

Species: Desmodesmus subspicatus (Green algae)

Exposure duration: 72 h

Method: OECD Test Guideline 201

No toxic effects in the water-soluble range.

#### **Acute bacterial toxicity**

Thermoplastic polyurethane

EC50 > 10,000 mg/l

Test type: Respiration inhibition

Species: activated sludge

Exposure duration: 3 h

Method: OECD Test Guideline 209

Studies of a comparable product.

Bis(2,6-diisopropylphenyl) carbodiimide

EC50 > 1,000 mg/l

Test type: Respiration inhibition

Species: activated sludge

Exposure duration: 3 h

Method: OECD Test Guideline 209

#### **Ecotoxicology Assessment**

Bis(2,6-diisopropylphenyl) carbodiimide

Acute aquatic toxicity: Based on available data, the classification criteria are not met.

Chronic aquatic toxicity: Based on available data, the classification criteria are not met.

Toxicity Data on Soil: Adsorbs on soil.

Impact on Sewage Treatment: Because of the low bacterial toxicity, there is no risk of an adverse effect on the performance of biological waste water treatment plants.

## 12.2 Persistence and degradability

Thermoplastic polyurethane

Biodegradation: 1 %, 28 d, i.e. not readily degradable

Method: Tested according to Directive 92/69/EEC.

Studies of a comparable product.

Bis(2,6-diisopropylphenyl) carbodiimide

Inoculum: activated sludge

Concentration: 100 mg/l calculated with Test substance

Biodegradation: 1 %, 28 d, i.e. not readily degradable

Method: OECD Test Guideline 301 F

### Stability in water

Bis(2,6-diisopropylphenyl) carbodiimide

Test type: Hydrolysis

Half life: 15 d at 25 °C (pH: 7)

Method: Directive 67/548/EEC, Annex V, C.7.

Hydrolyses on contact with water.

Test type: Hydrolysis

Half life: 10 d at 25 °C (pH: 4)

Method: Directive 67/548/EEC, Annex V, C.7.

Hydrolyses on contact with water.

Test type: Hydrolysis

Half life: 25 d at 25 °C (pH: 9)

Method: Directive 67/548/EEC, Annex V, C.7.

Hydrolyses on contact with water.

### Photodegradation

Bis(2,6-diisopropylphenyl) carbodiimide

Test type: Phototransformation in air

sensitizer: OH-radicals

Concentration sensibilisator: 1,500,000 1/cm<sup>3</sup>

Rate constant: 3.3177E-11 cm<sup>3</sup>/s

Half-life indirect photolysis: 3.87 h

Method: SRC - AOP (calculation)

After evaporation or exposure to the air, the product will be rapidly degraded by photochemical processes.

**Volatility (Henry's Law constant)**

Bis(2,6-diisopropylphenyl) carbodiimide

Calculated value = 29.3 Pa\*m<sup>3</sup>/mol

The substance has to be scored as being slightly volatile from water.

**12.3 Bioaccumulative potential Bioaccumulation**

Bis(2,6-diisopropylphenyl) carbodiimide

Bioconcentration factor (BCF): 1,912

Method: (calculated)

Accumulation in aquatic organisms is unlikely.

**Partition coefficient (n-octanol/water)**

Bis(2,6-diisopropylphenyl) carbodiimide

log Pow: > 6.2

Method: EG A8

**12.4 Mobility in soil****Distribution among environmental compartments**

Bis(2,6-diisopropylphenyl) carbodiimide

Adsorption/Soil

Koc value: 2511886.4 log

Koc value: 6.4

Method: OECD Test Guideline 121 immobile

**12.5 Results of PBT and vPvB assessment**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**12.6 Endocrine disrupting properties**

Based on available information, the mixture does not contain substances identified as having endocrine-disrupting properties for the environment at concentrations of 0.1 % or higher.

**12.7 Other adverse effects**

The product does not add to the AOX-value of effluent water (EN 1485).

**Section 13: DISPOSAL CONSIDERATIONS**

Dispose of contents/container in accordance with applicable international, national and local laws and regulations. For disposal within the EU, use an appropriate waste code according to the European Waste Catalogue (EWC).

### 13.1 Waste treatment methods

After containers have been emptied as thoroughly as possible (e.g. by pouring, scraping or draining until "drip-dry"), they can be sent to an appropriate collection point set up within the framework of the existing take-back scheme of the chemical industry. Containers must be recycled in compliance with national legislation and environmental regulations.

The product is suitable for mechanical recycling. After appropriate treatment it can be remelted and reprocessed into new moulded articles. Mechanical recycling is only possible if the material has been selectively retrieved and carefully segregated according to type.

Do not dispose of into wastewater.

## Section 14: TRANSPORT INFORMATION

Transport item	ADR/RID	ADN	IATA	IMDG
UN number	Not dangerous goods.	Not dangerous goods.	Not dangerous goods.	Not dangerous goods.
UN proper shipping name	Not dangerous goods.	Not dangerous goods.	Not dangerous goods.	Not dangerous goods.
Transport hazard class(es)	Not dangerous goods.	Not dangerous goods.	Not dangerous goods.	Not dangerous goods.
Packing group	Not dangerous goods.	Not dangerous goods.	Not dangerous goods.	Not dangerous goods.
Environmental hazards / marine pollutant	Not environmentally hazardous for transport.	Not environmentally hazardous for transport. Dangerous goods classification for inland waterways tanker by request only.	Not environmentally hazardous for transport.	Marine pollutant: No.
Item	Details			
Special precautions for user	See Sections 6 to 8. Additional information: not regulated as dangerous goods. Keep dry. Keep separated from foodstuffs.			
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.			

## Section 15: REGULATORY INFORMATION

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

This safety data sheet has been prepared in accordance with Regulation (EC) No 1907/2006 as amended by Commission Regulation (EU) 2020/878.

#### Water contaminating class (Germany)

nw not water endangering

Identification number according to AwSV: 766

## 15.2 Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for:

Bis(2,6-diisopropylphenyl) carbodiimide

## Section 16: OTHER INFORMATION

Full text of the hazard statements of the CLP classification (1272/2008/CE) referred to under sections 2, 3 and 10.

Revision information: This version has been reviewed and updated for alignment with the 16-section SDS structure and key requirements of Commission Regulation (EU) 2020/878.

Recommended training: Users should be trained in safe handling of polymer filament, hot surfaces, thermal processing fumes and good industrial hygiene practice.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

H330 Fatal if inhaled.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335 May cause respiratory irritation.

H360F May damage fertility.

H372 Causes damage to organs through prolonged or repeated exposure.

### Abbreviations and acronyms:

**AND:** Accord européen relatif au transport international des marchandises Dangereuses par voie de Navigation intérieure

**ADR:** Accord européen relatif au transport international des marchandises Dangereuses par Route

**ANSI:** American National Standards Institute

**ASTM:** American Society of Testing and Materials (US)

**ATE:** Acute Toxic Estimate

**AwSv:** Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen

**BCF:** Bioconcentration Factor

**CAS:** Chemical Abstract Service

**CLP:** Regulation on Classification, Labelling and Packaging of Substances and Mixtures

**CMR:** Cancerogenic Mutagenic Reprotoxic

**DIN:** Deutsches Institut für Normung

**DNEL:** Derived No-Effect Level

**EC...:** Effect Concentration ... %

**EWC:** European Waste Catalogue

**IATA:** International Air Transport Association

**IBC:** Intermediate Bulk Container

**ICAO:** International Civil Aviation Organization

**IMDG:** International Maritime Dangerous Goods

**IMO:** International Maritime Organization

**ISO:** International Organization for Standardization

**IUPAC:** International Union of Pure and Applied Chemistry

**LOAEL:** Lowest Observable Adverse Effect Level

**LC...:** Lethal Concentration, ...%

**LD...:** Lethal Dose, ...%

**MARPOL:** International Convention for the Prevention of Pollution From Ships

**NOAEL:** No Observed Adverse Effect Level

**NOEL/NOEC:** No Observed Effect Level/Concentration

**OECD:** Organisation for Economic Co-operation and Development

**PBT:** persistent, bioaccumulative, toxic

**PNEC:** Predicted No-Effect Concentration

**REACH:** Registration, Evaluation, Authorisation and Restriction of Chemicals

**RID:** Règlement concernant le transport International ferroviaire de marchandises Dangereuses

**STOT:** Specific Target Organ Toxicity

**TRGS:** Technische Regeln für Gefahrstoffe

**vPvB:** very Persistent, very Bioaccumulative

**WGK:** Wassergefährdungsklasse

### **Further information:**

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