



Material Safety Data Sheet

ACCORDING TO EC Directives 1907/2006/EC

112000021599

SECTION1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT INFORMATION: Thermoplastic polyurethanes(TPU)

APPLICATION: Manufacturer of molded plastic products

SUPPLIER: SHANGHAI FUNCTECH CO.,LTD

ADDRESS: Building 23 Huabin Industrial Park No.99 Huajia Road Songjiang District,
Shanghai, China 201613

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SECTION2: COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME: thermoplastic polyurethanes(TPU)

Composition:

CAS NO.	Name	Content (%)
124-04-9	Adipic acid	40
110-63-4	1,4-Butanediol	30
101-68-8	Isocyanate	30

SECTION3: HAZARDS IDENTIFICATION

Not a hazardous substance to environment and health according to Regulation(EC)NO2006/121/EC or 1999/45/EC and the definition of the effective adaptation and derived national legislation.

Intrusive ways: -- Health hazards: --

Environmental hazard: -- Explosion hazard: --

SECTION4: FIRST AID MEASURES

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In case of skin contact: Contact With Hot Melt: Cool immediately with plenty of water. Do not remove product crusts which may have formed neither forcibly nor by applying any solvents to the skin involved. To obtain treatment for possible burns, and appropriate skin care, seek medical advice immediately. The following information refers to the handling of the product at room temperature. In case of skin contact wash affected areas thoroughly with soap and plenty of water.

SECTION5: FIREFIGHTING MEASURES

Suitable extinguishing media: Water, Foam, Dry chemical
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. Firemen must wear self-contained breathing apparatus. Do not allow contaminated extinguishing water to enter the soil, ground-water or surface waters.

SECTION6: ACCIDENTAL RELEASE MEASURES

Personal precautions: Put on protective equipment(see SECTION8). Granules-slip hazard! Ensure adequate ventilation/exhaust extraction. Keep unauthorized persons away.
Environmental precautions: Do not flush into surface water or sanitary sewer system.
Methods for cleaning up: Use mechanical handling equipment. Avoid dust formation. Sweep up and shovel into suitable containers for disposal.
Additional advice: For further disposal measures see SECTION13.

SECTION7: HANDLING AND STORAGE

Handling:

Adequate ventilation and if necessary, effective exhaust must be provided at the workplace when opening fresh drums, drying granules and processing the conditions small amounts of emissions may occur.

Provided good ventilation and/or local exhaust systems are used, the Workplace Exposure Limit(s) stated in SECTION8 should not be exceeded. Dust must be removed



by effective exhaust ventilation.

Storage:

Keep container tightly closed and dry.

VCI storage class(VCI=German Association of the Chemical Industry): 11

Storage temperature: <40°C

SECTION8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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
tetrahydrofuran	109-99-9	EU ELV	TWA	50ppm 150 mg/m ³		Dermal absorption possible
tetrahydrofuran	109-99-9	EU ELV	STEL	100ppm 300 mg/m ³		
tetrahydrofuran	109-99-9	CN OEL	TWA	300 mg/m ³		
tetrahydrofuran	109-99-9	CN OEL	STEL	450 mg/m ³		
General Limiting value of dust		CN OEL	TWA	8mg/m ³		General dust
General Limiting value of dust		CN OEL	STEL	10mg/m ³		General dust

Respiratory protection:

In case of dust formation use respiratory equipment with filter type particle filter P1 according to EN 143.



Hand protection:

Suitable materials for safety gloves; DIN EN 374-3:

polyvinyl chloride - PVC (≥ 0.5 mm)

Contaminated and/or damaged gloves must be changed.

Eye protection:

Wear eye/face protection.

Skin and body protection:

Wear suitable protective clothing.

Further protective measures:

Do not breathe dust/vapor. Grease skin.

Hygiene measures:

Keep away from foodstuffs, drinks and tobacco. Wash hands and face before breaks and at the end of work. Keep working clothes separately. Change contaminated clothing.

SECTION9: PHYSICAL AND CHEMICAL PROPERTIES

Colour: different according to colouration

Form: granular

Odour: almost odourless

Softening point: $> 120^{\circ}\text{C}$

Density: ca. $1,2 \text{ g/cm}^3$

Bulk density: $500 - 700 \text{ kg/m}^3$

Vapour pressure: not applicable

Viscosity, dynamic: not applicable

Water solubility: practically insoluble

PH: not applicable

Ignition temperature: $> 210^{\circ}\text{C}$

Autoignition temperature: not applicable

Explosion limits: not applicable

SECTION10: STABILITY AND REACTIVITY



Hazardous reactions: No hazardous reactions observed.

Hazardous decomposition products: Smouldering or incomplete combustion leads to the formation of toxic gas mixtures consisting mainly of CO, CO₂ and nitrogen oxides.

Thermal decomposition: Decomposition begins at 230°C.

SECTION11: TOXICOLOGICAL INFORMATION

Under recommended processing conditions small amounts of isocyanates may be emitted.

Exceeding the recommended processing temperatures leads to a significant increase in the amount of isocyanate vapor generated.

Over-exposure entails a risk of concentration-dependent inhalatory irritation and/or sensitization by isocyanates (delayed appearance of difficult breathing, coughing, asthma is possible).

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

Substance CAS-No.

R-phrased(s)

Isocyanates (all, as -NCO) R42 May cause sensitisation by inhalation.

Tetrahydrofuran 109-99-9 R36/37 Irritating to eyes and respiratory system.

Additional information:

According to our experience and information the product has no harmful effects on health if properly handled.

SECTION12: ECOLOGICAL INFORMATION

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

Further information on ecology:

The product is practically insoluble in water. In view of its consistency and insolubility in water, no ecological problems are to be expected if the product is properly handled. The product is not readily biodegradable.

SECTION13: DISPOSAL CONSIDERATIONS

Dispose in accordance with applicable international, national and local laws, ordinances and statutes. For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used.

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.

SECTION14: TRANSPORT INFORMATION

ADR/RID - -

ADNR - -

IATA - -

IMDG - -

Other information : Not dangerous cargo.

Slight smell. Keep dry.

Keep separated from foodstuffs.

SECTION15: REGULATORY INFORMATION

No labeling necessary according to EC Directives 2006/121/EC or 1999/45/EC and their valid adaptations and derived national regulations.

SECTION16: OTHER INFORMATION

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.