

FLEXSET BLACK SIDE A MSDS VERSION 1 COMPILED MARCH 25 2015.

1. PRODUCT NAME AND COMPANY INFORMATION

PRODUCT CODE: FLEXSETASIDE
TRADE NAME: FLEXSET Black A SIDE
MANUFACTURER: Roklin Systems, Inc.
ADDRESS: 300 E. Shell Road, Ventura, CA 93001, U.S.A.
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DATE REVISED: March 25th 2012

2. COMPOSITION / INFORMATION ON INGREDIENTS

Nature Diphenylmethane-diisocyanate prepolymer

Hazardous Components in Product for EC

Type of product: Substance
Diphenylmethane-diisocyanate, isomers and homologues

Hazardous components
Diphenylmethane-diisocyanate, isomers and homologues

Concentration [wt.-%]: ca. 100

CAS-No.: 9016-87-9

Classification (1272/2008/CE): Acute Tox. 4 Inhalative H332 Skin Irrit. 2 H315 Eye Irrit. 2 H319 Sens. Resp. 1 H334 Skin Sens. 1 H317 Carc. 2 H351 STOT SE 3 H335 STOT RE 2 Inhalative H373

Specific threshold concentration (GHS):

Sens. Resp. 1 H334 $\geq 0,1 \%$

Eye Irrit. 2 H319 $\geq 5 \%$

Skin Irrit. 2 H315 $\geq 5 \%$

STOT SE 3 H335 $\geq 5 \%$

Classification (67/548/EEC): Carc.Cat.3 R40 Xn R20 R42/43 R48/20 Xi R36/37/38

Classification/labeling analogous to Index No.: 615-005-00-9

Specific threshold concentration

Xn R42 0,1 - < 1 %

Xn R40, R42/43 1 - < 5 %

Xn R36/37/38, R40, R42/43 5 - < 10 %

Xn R36/37/38, R40, R42/43, R48/20 10 - < 25 %

Xn R20, R36/37/38, R40, R42/43, R48/20 $\geq 25 \%$



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3. HAZARD IDENTIFICATION

Classification of the substance or mixture

Classification (1272/2008/CE):

Acute toxicity, Inhalative, Category 4 (H332)
Skin irritation, Category 2 (H315)
Eye irritation, Category 2 (H319)
Sensitization of the respiratory airways, Category 1 (H334)
Sensitization of the skin, Category 1 (H317)
Carcinogenicity, Category 2 (H351)
Specific target organ toxicity (single exposure), Category 3 (H335)
Specific target organ toxicity (repeated exposure), Category 2 (H373)

Classification (2006/121/EC, 1999/45/EC):

Harmful by inhalation. Harmful: danger of serious damage to health by prolonged exposure through inhalation.
Limited evidence of a carcinogenic effect.
May cause sensitization by inhalation and skin contact.
Irritating to eyes, respiratory system and skin.

4. FIRST AID MEASURES

Description of first aid measures

General advice: Soiled, soaked clothing and shoes must be immediately removed, decontaminated and disposed of.

If inhaled: Take the person into the fresh air and keep him warm, let him rest; if there is difficulty in breathing, medical advice is required.

In case of skin contact: In the event of contact with the skin, preferably wash with a cleanser based on polyethylene glycol or with plenty of warm water and soap. Consult a doctor in the event of a skin reaction.

In case of eye contact: Hold the eyes open and rinse with preferably lukewarm water for a sufficiently long period of time (at least 10 minutes). Contact an ophthalmologist.

If swallowed: DO NOT induce the patient to vomit, medical advice is required.

Most important symptoms and effects, both acute and delayed

Notes to physician: The product irritates the respiratory tract and may trigger sensitization of the skin and respiratory tract. Treatment of acute irritation or bronchial constriction is primarily symptomatic. Extended medical treatment may be required depending on the degree of exposure and the severity of the symptoms.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media: Carbon dioxide (CO₂), Foam, extinguishing powder, in cases of larger fires, water spray should be used.

Unsuitable extinguishing media: High volume water jet

Special hazards arising from the substance or mixture:

Burning releases carbon monoxide, carbon dioxide, oxides of nitrogen, isocyanate vapors and traces of hydrogen cyanide. In the event of fire and/or explosion do not breathe fumes. Fire in vicinity poses risk of pressure build-up and rupture. Containers at risk from fire should be cooled with water and, if possible, removed from the danger area.



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Advice for fire-fighters:

During fire-fighting respirator with independent air-supply and airtight garment is required. Do not allow contaminated extinguishing water to enter the soil, ground-water or surface waters.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Put on protective equipment. Ensure adequate ventilation/exhaust extraction. Keep unauthorized persons away.

Environment related measures: Do not allow to escape into waterways, wastewater or soil.

Methods and material for containment and cleaning up: Remove mechanically; cover the remainder with wet, absorbent material (e.g. sawdust, chemical binder based on calcium silicate hydrate, sand). After approx. one hour transfer to waste container and do not seal (evolution of CO₂!). Keep damp in a safe ventilated area for several days. Spill area can be decontaminated with the following recommended decontamination solution: Decontamination solution 1: 8-10% sodium carbonate and 2% of liquid soap in water Decontamination solution 2: Liquid/yellow soap (potassium soap with ~15% anionic tenside): 20ml; Water:700ml; Polyethylenglycol (PEG 400): 350m

7. HANDLING AND STORAGE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Wear skin, eye, and respiratory protection during cleanup. Soak up material with absorbent and shovel into a chemical waste container. Cover container, but do not seal, and remove from work area. Prepare a decontamination solution of 2.0% liquid detergent and 3-8% concentrated ammonium hydroxide in water (5-10% sodium carbonate may be substituted for the ammonium hydroxide). Follow the precautions on the supplier's material safety data sheets. All operations should be performed by trained personnel familiar with the hazards of the chemicals used. Treat the spill area with the decontamination solution, using about 10 parts of solution for each part of the spill, and allow it to react for at least 15 minutes. Carbon dioxide will be evolved, leaving insoluble polyureas. Residues from spill cleanup, even when treated as described may continue to be regulated under provisions of RCRA and require storage and disposal as hazardous waste.

WASTE DISPOSAL METHOD:

Empty containers can be disposed of in a normal manner. If A and B residue exists they are to be combined and mixed to create an inert polymerized mass which can then be disposed of in compliance with all relevant local laws and regulations.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

Keep in cool, dry, ventilated storage area, in closed containers and out of direct sunlight. Store in containers above ground and surrounded by dikes to contain spills or leaks. Keep containers closed when not in use.

OTHER PRECAUTIONS:

Prevent skin and eye contact, observe TLV limitations. Avoid breathing vapors when vapors are present. Workers should shower and change to fresh clothing after each shift. A sensitized individual should not be exposed to the product that caused the sensitization. Air circulation and exhaustion of isocyanate vapors must be maintained until the coatings have fully cured to insure that no health hazard remains. Warning properties (irritation of the eyes, nose and throat or odor) are not adequate to prevent chronic overexposure from inhalation. This product can produce asthmatic sensitization upon either single inhalation exposure to a relatively high concentration or upon repeated inhalation exposure to lower concentrations. Exposure to vapors of heated isocyanates can be extremely dangerous. Employee education and training in safe handling of this material is required under OSHA hazard communication standard. Individuals with existing respiratory disease such as chronic bronchitis, emphysema, or asthma should not be exposed to isocyanates. These individuals should be identified through baseline and annual evaluation and removed from further exposure. Medical examination should include medical history, vital capacity, and forced expiratory volume at one second.

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Conditions for safe storage, including any incompatibilities:

Keep container tightly closed and dry. Further information on the storage conditions which must be observed to preserve quality can be found in our product information sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Substance	CAS-No.	Basis	Type	Value	Ceiling Limit Value	Remarks
diphenylmethane-4,4'-diisocyanate	101-68-8	TRGS 900	TLV	0,05 mg/m3	=2=	Y
diphenylmethane-4,4'-diisocyanate	101-68-8	TRGS 900	STEL FAC	0,05 mg/m3	1	Substance listed with both Peak Factor and STEL Factor. The peak Factor is supplied With AGW values
diphenylmethane-4,4'-diisocyanate	101-68-8	TRGS 900 CL	STEL	0,05 mg/m3		Category I: substances for which the localized effect has an assigned OEL respiratory passages.

Other Precautions:

Prevent skin and eye contact. Wear eye/face protective gear and suitable protective clothing

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance:	liquid	
Color:	brown	
Odor:	earthy, musty	
Odor Threshold:	not established	
pH:	not established	
Pour point:	-24 °C	DIN 51556
Boiling point/boiling range:	> 300 °C	
Flash point:	> 250 °C	DIN 51758
Evaporation rate:	not established	
Flammability (solid, gas):	not applicable	
Burning number:	not applicable	

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9. PHYSICAL AND CHEMICAL PROPERTIES (CONTINUED)

Vapor pressure:	1 hPa at 20 °C	EG A4
	12 hPa at 50 °C	EG A4
	17 hPa at 55 °C	EG A4
	Diphenyl-methane-diisocyanate (MDI) < 0,00001 hPa at 20 °C	
Vapor density:	not established	
Density:	1,24 g/cm ³ at 20 °C	DIN 51757
Miscibility with water:	immiscible at 15 °C	
Water solubility:	insoluble, reacts under separation from CO ₂	
Surface tension:	not established	
Partition coefficient (n-octanol/water):	not established	
Autoignition temperature:	not applicable	
Ignition temperature:	> 500 °C	DIN 51794
Decomposition temperature:	not established	
Viscosity, dynamic:	296 mPa.s at 20 °C	DIN 53211
Explosive properties:	not established	
Dust explosion class:	not applicable	
Oxidizing properties:	not established	
Other information:	The indicated values do not necessarily correspond to the product specification. Please refer to the technical information sheet for specification data.	

10. STABILITY AND REACTIVITY**Chemical stability:** Polymerizes at about 200 °C with evolution of CO₂.**Possibility of hazardous reactions:**Exothermic reaction with amines and alcohols; reacts with water forming CO₂; in closed containers, risk of bursting owing to increase of pressure.**Hazardous decomposition products:**

No hazardous decomposition products when stored and handled correctly

11. TOXICOLOGICAL INFORMATION**Information on toxicological effects****Acute toxicity, dermal:**

diphenylmethane-diisocyanate, isomers and homologues

LD₅₀ rabbit, male/female: > 9.400 mg/kg

Method: OECD Test Guideline 402

Acute toxicity, inhalation:

diphenylmethane-diisocyanate, isomers and homologues

LC₅₀ rat, male/female: 310 mg/m³, 4 h

Test atmosphere: dust/mist

Method: OECD Test Guideline 403

The substance was tested in a form (i.e. specific particle size distribution) that is different from the forms in which the substance is placed on the market and in which it can reasonably be expected to be used. Therefore, a modified classification for acute inhalation toxicity is justified.

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Primary skin irritation:

diphenylmethane-diisocyanate, isomers and homologues: rabbit

Result: slight irritant

Method: OECD Test Guideline 404

Sensitization:

diphenylmethane-diisocyanate, isomers and homologues

Skin sensitization according to Magnusson/Kligmann (maximizing test): guinea pig

Result: negative

Method: OECD Test Guideline 406

Skin sensitization (local lymph node assay (LLNA)): mouse

Result: positive

Method: OECD Test Guideline 429

Toxicological studies of a comparable product.

Respiratory sensitization rat

Result: May cause sensitization by inhalation.

Carcinogenicity:

diphenylmethane-diisocyanate, isomers and homologues

Species: rat, male/female

Application Route: Inhalative

Dose Levels: 0 - 0,2 - 1 - 6 mg/m³

Test substance: as aerosol

Exposure duration: 2 a

Frequency of treatment: 6 hours/day, 5 days/week

Method: OECD Test Guideline 453

Occurrence of tumors in the highest dose group.

Additional information:

Special properties/effects: Eye effect: Causes slight temporary reddening and swelling of the conjunctiva and slight reversible clouding of the cornea. In high concentrations vapor of product has irritating effects on eyes and mucous membranes. Skin effect: Irritant. Prolonged contact with the skin may cause tanning and irritant effects. Human experience: Irritation of the mucous membranes in the nose, throat and lungs, dryness of the throat, pressure on the chest, sometimes accompanied by breathing difficulties and headaches. Possible delayed appearance of the symptoms and allergic reaction in susceptible persons.

12. ECOLOGICAL INFORMATION

Do not allow to escape into waterways, wastewater or soil. Isocyanate reacts with water at the interface forming CO₂ and a solid, insoluble product with a high melting point (polyurea). This reaction is accelerated by surfactants (e.g. detergents) or by water-soluble solvents. Previous experience shows that polyurea is inert and non-degradable.

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with applicable international, national and local laws. If residue exists, containers may be washed with water and the resultant inert waste product can be disposed of according to local law, and the container can then be recycled after removal of hazardous warning labels.



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14. TRANSPORTATION INFORMATION

ADR/RID Not dangerous goods

ADN Not dangerous goods

ADNR (tanker only) Not dangerous goods

IATA Not dangerous goods

IMDG Not dangerous goods

Special precautions for user : Not dangerous cargo. Avoid temperatures below +10 °C. Avoid heat above +50 °C. Keep dry. Keep away from foodstuffs, acids and alkalis.

15. REGULATORY INFORMATION

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

TA Luft List:

Type: Organic Substances
portion Class 1: 100 %

Water contaminating class: 1 slightly water endangering (in accordance with Annex 4 to the Directive on Water-Hazardous Substances)

Any existing national regulations on the handling of isocyanates must be observed.

16. OTHER 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 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.