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SECTION 1. IDENTIFICATION

Product name	:	SikaForce [®] -7780 L12 CA Part B
Company name	:	Sika Corporation
		201 Polito Avenue Lyndhurst, NJ 07071 USA www.sikausa.com
Telephone	:	(201) 933-8800
Telefax	:	(201) 804-1076
E-mail address	:	ehs@sika-corp.com
Emergency telephone	:	CHEMTREC: 800-424-9300 INTERNATIONAL: +1-703-527-3887
Recommended use of the chemical and restrictions on use	:	For further information, refer to product data sheet.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity (Inhalation)	:	Category 4
Skin irritation	:	Category 2
Eye irritation	:	Category 2B
Respiratory sensitization	:	Category 1
Skin sensitization	:	Category 1
Specific target organ toxicity - single exposure	:	Category 3 (Respiratory system)
Specific target organ toxicity - repeated exposure (Inhala- tion)	:	Category 2

GHS label elements



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Hazard pictograms		
Signal Word	: Danger	
Hazard Statements	culties if inhaled. H335 May cause respiratory	skin reaction. sthma symptoms or breathing diffi-
Precautionary Statements	Prevention:	
	P260 Do not breathe mist or P264 Wash skin thoroughly a P271 Use only outdoors or in P272 Contaminated work clo the workplace. P280 Wear protective gloves P284 Wear respiratory protective	after handling. a well-ventilated area. thing must not be allowed out of
	 P304 + P340 + P312 IF INHA and keep comfortable for bread doctor if you feel unwell. P305 + P351 + P338 IF IN EX for several minutes. Remove to do. Continue rinsing. P333 + P313 If skin irritation attention. P337 + P313 If eye irritation p tion. P342 + P311 If experiencing POISON CENTER/ doctor. 	ash with plenty of soap and water. ALED: Remove person to fresh air athing. Call a POISON CENTER/ YES: Rinse cautiously with water contact lenses, if present and easy or rash occurs: Get medical advice/ persists: Get medical advice/ atten- respiratory symptoms: Call a ninated clothing and wash it before
	Storage: P403 + P233 Store in a well-v tightly closed. P405 Store locked up.	ventilated place. Keep container
	Disposal: P501 Dispose of contents/ cc posal plant.	ontainer to an approved waste dis-



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Additional Labeling

There are no ingredients with unknown acute toxicity used in a mixture at a concentration >= 1%.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixtures

Components

Chemical name	CAS-No.	Classification	Concentra- tion (% w/w)
4,4'-methylenediphenyl diisocyanate	101-68-8	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2B; H320 Resp. Sens. 1; H334 Skin Sens. 1; H317 STOT SE 3; H335 STOT RE 2; H373	>= 30 - < 50
Diphenylmethanediisocyanate, iso- meres and homologues	9016-87-9	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2B; H320 Resp. Sens. 1; H334 Skin Sens. 1; H317 STOT SE 3; H335 STOT RE 2; H373	>= 30 - < 50
Aromatic Polyisocyanate- Prepolymer	150449-03-9	Skin Irrit. 2; H315 Eye Irrit. 2B; H320 Resp. Sens. 1; H334 Skin Sens. 1; H317 STOT SE 3; H335 STOT RE 2; H373	>= 20 - < 30
o-(p-isocyanatobenzyl)phenyl isocy- anate	5873-54-1	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2B; H320 Resp. Sens. 1; H334 Skin Sens. 1; H317 STOT SE 3; H335 STOT RE 2; H373	>= 1 - < 5
4,4`-Methylenediphenyl diisocya- nate, oligomers	25686-28-6	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2B; H320 Eye Irrit. 2A; H319 Resp. Sens. 1; H334 Skin Sens. 1; H317 STOT SE 3; H335 STOT RE 2; H373	>= 0.1 - < 1

Actual concentration is withheld as a trade secret

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TION 4. FIRST AID MEASUR	ES	
General advice	:	Move out of dangerous area. Consult a physician. Show this material safety data sheet to the doctor in attend- ance.
If inhaled	:	Move to fresh air. Consult a physician after significant exposure.
In case of skin contact	:	Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. If symptoms persist, call a physician.
In case of eye contact	:	Remove contact lenses. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	:	Clean mouth with water and drink afterwards plenty of water Do not induce vomiting without medical advice. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. Obtain medical attention.
Most important symptoms and effects, both acute and delayed	:	irritant effects sensitizing effects Asthmatic appearance Cough Respiratory disorder Allergic reactions Headache Causes skin and eye irritation. May cause an allergic skin reaction. Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficul- ties if inhaled. May cause respiratory irritation. May cause damage to organs through prolonged or repeated exposure if inhaled.
Notes to physician	:	Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local cir- cumstances and the surrounding environment.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
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Special protective equipment : In the event of fire, wear self-contained breathing apparatus. for fire-fighters

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protec- : tive equipment and emer- gency procedures	Use personal protective equipment. Deny access to unprotected persons.
Environmental precautions :	Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for : containment and cleaning up	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
Advice on safe handling	:	 Avoid formation of aerosol. Avoid exceeding the given occupational exposure limits (see section 8). Do not get in eyes, on skin, or on clothing. For personal protection see section 8. Persons with a history of skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Follow standard hygiene measures when handling chemical products.
Conditions for safe storage	:	Store in original container. Keep in a well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Store in accordance with local regulations.





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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parame- ters / Permissible concentration	Basis
4,4'-methylenediphenyl diiso- cyanate	101-68-8	С	0.02 ppm 0.2 mg/m3	OSHA Z-1
		С	0.02 ppm 0.2 mg/m3	OSHA P0
		TWA	0.005 ppm	ACGIH
Diphenylmethanediisocyanate, isomeres and homologues	9016-87-9	С	0.02 ppm 0.2 mg/m3	OSHA Z-1
		С	0.02 ppm 0.2 mg/m3	OSHA P0
		TWA	0.005 ppm	ACGIH
Aromatic Polyisocyanate- Prepolymer	150449-03-9	TWA	0.005 ppm	ACGIH
		С	0.02 ppm 0.2 mg/m3	OSHA Z-1
		С	0.02 ppm 0.2 mg/m3	OSHA P0
o-(p-isocyanatobenzyl)phenyl isocyanate	5873-54-1	С	0.02 ppm 0.2 mg/m3	OSHA Z-1
		С	0.02 ppm 0.2 mg/m3	OSHA P0
		TWA	0.005 ppm	ACGIH
4,4`-Methylenediphenyl diiso- cyanate, oligomers	25686-28-6	TWA	0.005 ppm	ACGIH
<u> </u>		TWA	0.005 ppm	ACGIH
		С	0.02 ppm 0.2 mg/m3	OSHA Z-1
		С	0.02 ppm 0.2 mg/m3	OSHA P0

The above constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

Engineering measures	:	Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use pro- cess enclosures, local exhaust ventilation or other engineer- ing controls to keep worker exposure below any recommend- ed or statutory limits.

Personal protective equipment

Respiratory protection	:	Use a properly fitted NIOSH approved air-purifying or air-fed
		respirator complying with an approved standard if a risk as-
		sessment indicates this is necessary.

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	The filter class for the respirator must be suitable for the ma imum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when han- dling the product. If this concentration is exceeded, self- contained breathing apparatus must be used.	I X-
Hand protection	: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handlir chemical products if a risk assessment indicates this is necessary.	
Eye protection	: Safety eyewear complying with an approved standard shoul be used when a risk assessment indicates this is necessary	
Skin and body protection	: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.	
Hygiene measures	 Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Remove contaminated clothing and protective equipment before entering eating areas. Wash thoroughly after handling. 	

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Color	:	black
Odor	:	slight
Odor Threshold	:	No data available
рН	:	No data available
Melting point/range / Freezing	:	No data available
point Boiling point/boiling range	:	No data available
Flash point	:	ca. 214 °F / 101 °C (Method: closed cup)
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available



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Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	0.01 hpa
Relative vapor density	:	No data available
Density	:	ca. 1.23 g/ml (68 °F / 20 °C)
Solubility(ies) Water solubility	:	insoluble
Solubility in other solvents	:	No data available
Partition coefficient: n- octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	ca. 569 mm2/s
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Volatile organic compounds (VOC) content	:	0 g/l A+B Combined

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	The product is chemically stable.
Possibility of hazardous reac- tions	:	Stable under recommended storage conditions.
Conditions to avoid	:	No data available
Incompatible materials	:	No data available
Hazardous decomposition products	:	No decomposition if stored and applied as directed.



SECTION 11. TOXICOLOGICAL INFORMATION

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Acute toxicity

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Harmful if inhaled.		
Components:		
4,4'-methylenediphenyl diis	юсу	vanate:
Acute oral toxicity	:	LD50 Oral (Rat): > 5,000 mg/kg Method: OECD Test Guideline 401
Acute inhalation toxicity	:	LC50: 1.5 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Expert judgment
Diphenylmethanediisocyan	ate,	isomeres and homologues:
Acute oral toxicity	:	LD50 Oral (Rat): > 10,000 mg/kg
Acute inhalation toxicity	:	LC50: 1.5 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Expert judgment Assessment: The component/mixture is moderately toxic after short term inhalation.
Acute dermal toxicity	:	LD50 Dermal (Rabbit): > 9,400 mg/kg
4,4`-Methylenediphenyl diis	SOC\	vanate, oligomers:
Acute oral toxicity	-	LD50 Oral (Rat): > 5,000 mg/kg
Acute inhalation toxicity	:	LC50: 1.5 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Expert judgment
Acute dermal toxicity	:	LD50 Dermal (Rabbit): > 9,400 mg/kg
Skin corrosion/irritation Causes skin irritation.		
Serious eye damage/eye irr Causes eye irritation.	itat	ion
Respiratory or skin sensitiz	atio	on
Skin sensitization May cause an allergic skin re	acti	on.



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Respiratory sensitization

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

Germ cell mutagenicity

Not classified due to lack of data.

Carcinogenicity

Not classified due to lack of data.				
IARC	Group 2B: Possibly carcinogenic to humans			
	Carbon black	1333-86-4		

OSHA Not applicable

NTP Not applicable

Reproductive toxicity

Not classified due to lack of data.

STOT-single exposure

May cause respiratory irritation.

STOT-repeated exposure

May cause damage to organs through prolonged or repeated exposure if inhaled. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Aspiration toxicity

Not classified due to lack of data.

Further information

Product:

Remarks

: Carbon black (1333-86-4) <u>Animal Toxicity:</u> Rat, oral, duration 2 year Effect: no tumors

Mouse, oral, duration 2 years Effect: no tumors Mouse, dermal, duration 18 months Effect: no skin tumors Rat, inhalation, duration 2 years Target organ: lungs Effect: inflammation, fibrosis, tumors Note: Tumors in the rat lung are considered to be related to the "particle overload phenomenon" rather than to a specific chemical effect of carbon black itself in the lung. These effects in rats have been reported in many studies on other poorly soluble inorganic particles and appear to be rat specific. Tumors have not been observed in other species (i.e., mouse and hamster) for carbon black or other poorly soluble particles under similar circumstances and study conditions. Mortality studies (human data): A study on carbon black pro-

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duction workers in the UK (Sorahan, 2001) found an increased risk of lung cancer in two of the five plant studied: however, the increase was not related to the dose of carbon black. Thus, the authors did not consider the increased risk in lung cancer to be due to carbon black exposure. A German study of carbon black workers at one plant (Morfeld, 2006; Buechte, 2006) found a similar increase in lung cancer risk but, like the Sorohan, 2001 (UK study) found no association with carbon black exposure. A large US study of 18 plants showed a reduction in lung cancer risk in carbon black production workers (DEII, 2006). Based upon these studies, the February 2006 Working Group at the International Agency for Research on Cancer (IARC) concluded that the human evidence for carcinogenicity was inadequate (IARC, 2010). Since the IARC evaluation of carbon black, Sorahan and Harrington (2007) have re-analyzed the UK study data using an alternative exposure hypothesis and found a positive association with carbon black exposure in two of the five plants. The same exposure hypothesis was applied by Morfeld and McCunney (2009) to the German cohort; in contrast, they found no association between carbon black exposure and lung cancer risk and, thus, no support for the alternative exposure hypothesis used by Sorahan and Harrington. Overall, as a result of these detailed investigations, no causative link between carbon black exposure and cancer risk in humans has been demonstrated. IARC CANCER CLASSIFICATION: In 2006 IARC re-affirmed its 1995 finding that there is "inadequate evidence" from human health studies to assess whether carbon black causes

cancer in humans. IARC concluded that there is "sufficient evidence" in experimental animal studies for the carcinogenicity of carbon black. IARC's overall evaluation is that carbon black is "possibly carcinogenic to humans" (Group 2B)". This conclusion was based on IARC's guidelines, which generally require such a classification if one species exhibits carcinogenicity in two or more animal studies (IARC, 2010).

Solvent extracts of carbon black were used in one study of rats in which skin tumors were found after dermal application and several studies of mice in which sarcomas were found following subcutaneous injection. IARC concluded that there was "sufficient evidence" that carbon black extracts can cause cancer in animals (Group 2B).

ICGIH CANCER CLASSIFICATION: Confirmed Animal Carcinogen with Unknown Relevance to Humans (Category A3 Carcinogen).

ASSESSMENT: Applying the guidelines of self-classification under the Globally Harmonized System of Classification and Labeling of Chemicals, carbon black is not classified as a carcinogen. Lung tumors are induced in rats as a result of repeated exposure to inert, poorly soluble particles like carbon

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black and other poorly soluble particles. Rats tumors are a result of a secondary non-genotoxic mechanism that has questionable relevance for classification in humans. In support of this opinion, the CLP Guidance for Specific Target Organ Toxicity - Repeated Exposure (STOT-RE), cites lung overload under mechanisms not relevant to humans. Human health studies show that exposure to carbon black does not increase the risk to carcinogenicity.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity		
Components:		
Diphenylmethanediisocyanate		-
Toxicity to fish :	•	LC50 (Brachydanio rerio (zebrafish)): > 1,000 mg/l Exposure time: 96 h
Toxicity to algae/aquatic : plants	:	EC50 (Desmodesmus subspicatus (green algae)): > 1,640 mg/l
Persistence and degradability No data available	/	
Bioaccumulative potential No data available		
Mobility in soil No data available		
Other adverse effects		
Product: Additional ecological infor- : mation	:	Do not empty into drains; dispose of this material and its con- tainer in a safe way. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods		
Waste from residues	:	Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
Contaminated packaging	:	Empty containers should be taken to an approved waste han-





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dling site for recycling or disposal.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Domestic regulation

49 CFR Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

TSCA list

: All chemical substances in this product are either listed as active on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)
4,4'-methylenediphenyl diisocyanate	101-68-8	5000

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards	Respiratory or ski Specific target or Skin corrosion or	gan toxicity (single or	repeated exposure)
SARA 313 :	tablished by SAR	nponents are subject f A Title III, Section 313 101-68-8	to reporting levels es- 3: >= 30 - < 50 %
	methylenediphe- nyl diisocyanate		



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Diphenylme- 9016-87-9 >= 30 - < 50 % thanediisocyanate, isomeres and homologues

Clean Air Act

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 112 (40 CFR 61): 4,4'-methylenediphenyl 101-68-8 >= 30 - < 50 % diisocyanate

California Prop. 65

MARNING: This product can expose you to chemicals including Carbon black, amorphous, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH OSHA P0		USA. ACGIH Threshold Limit Values (TLV) USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	:	USA. Óccupational Exposure Limits (OSHA) - Table Z-1 Lim- its for Air Contaminants
ACGIH / TWA OSHA P0 / C		8-hour, time-weighted average Ceiling limit
OSHA Z-1 / C		Ceiling

Notes to Reader

The information contained in this Safety Data Sheet applies only to the actual Sika Corporation ("Sika") product identified and described herein. This information is not intended to address, nor does it address the use or application of the identified Sika product in combination with any other material, product or process. All of the information set forth herein is based on technical data regarding the identified product that Sika believes to be reliable as of the date hereof. Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's current Product Data Sheet, product label and Safety Data Sheet for each Sika product, which are available at web site and/or telephone number listed in Section 1 of this SDS.

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