

**SECTION 1. IDENTIFICATION**

Product name : Sikaflex®-255 FC

Company name : Sika Corporation  
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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)**

Respiratory sensitization : Category 1

Skin sensitization : Category 1

Specific target organ toxicity - repeated exposure (Inhalation) : Category 2

**GHS label elements**

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : H317 May cause an allergic skin reaction.  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H373 May cause damage to organs through prolonged or repeated exposure if inhaled.



## Precautionary Statements

:

**Prevention:**

P260 Do not breathe mist or vapors.  
 P272 Contaminated work clothing must not be allowed out of the workplace.  
 P280 Wear protective gloves.  
 P284 Wear respiratory protection.

**Response:**

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
 P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
 P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.  
 P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/ doctor.  
 P362 + P364 Take off contaminated clothing and wash it before reuse.

**Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

**Additional Labeling**

There are no ingredients with unknown acute toxicity used in a mixture at a concentration  $\geq 1\%$ .

**Other hazards**

Intentional misuse by deliberate concentration and inhalation of vapor may be harmful or fatal.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS****Mixtures****Components**

Chemical name	CAS-No.	Classification	Concentration (% w/w)
xylene	1330-20-7	Flam. Liq. 3; H226 Acute Tox. 4; H332 Acute Tox. 4; H312 Skin Irrit. 2; H315 Eye Irrit. 2A; H319 STOT SE 3; H335 STOT RE 2; H373 Asp. Tox. 1; H304	$\geq 1 - < 5$
ethylbenzene	100-41-4	Flam. Liq. 2; H225 Acute Tox. 4; H332 STOT RE 2; H373 Asp. Tox. 1; H304 Eye Irrit. 2A; H319	$\geq 1 - < 5$
4,4'-methylenediphenyl diisocyanate	101-68-8	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2A; H319	$\geq 0.1 - < 1$



		Resp. Sens. 1; H334 Skin Sens. 1; H317 STOT SE 3; H335 STOT RE 2; H373	
3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate	4098-71-9	Acute Tox. 1; H330 Skin Corr. 1C; H314 Eye Dam. 1; H318 Resp. Sens. 1; H334 Skin Sens. 1; H317 STOT SE 3; H335	>= 0.1 - < 1

Actual concentration is withheld as a trade secret

**SECTION 4. FIRST AID MEASURES**

- General advice : Move out of dangerous area.  
Consult a physician.  
Show this material safety data sheet to the doctor in attendance.
- 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 : sensitizing effects  
Asthmatic appearance  
Allergic reactions  
May cause an allergic skin reaction.  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
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 circumstances 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.
- Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment. Deny access to unprotected persons.
- Environmental precautions : Do not flush into surface water or sanitary sewer system. 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 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. Follow standard hygiene measures when handling chemical products.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place. Store in accordance with local regulations.

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Ingredients with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis



xylene	1330-20-7	TWA	100 ppm 435 mg/m3	OSHA Z-1
		TWA	100 ppm	ACGIH
		STEL	150 ppm	ACGIH
		STEL	150 ppm 655 mg/m3	OSHA P0
		TWA	100 ppm 435 mg/m3	OSHA P0
ethylbenzene	100-41-4	TWA	100 ppm 435 mg/m3	OSHA Z-1
		TWA	100 ppm 435 mg/m3	OSHA P0
		STEL	125 ppm 545 mg/m3	OSHA P0
		TWA	20 ppm	ACGIH
4,4'-methylenediphenyl diisocyanate	101-68-8	TWA	0.005 ppm	ACGIH
		C	0.02 ppm 0.2 mg/m3	OSHA Z-1
		C	0.02 ppm 0.2 mg/m3	OSHA P0
3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate	4098-71-9	TWA	0.005 ppm	OSHA P0
		STEL	0.02 ppm	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 process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended 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 assessment indicates this is necessary.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

**Eye protection** : Safety eyewear complying with an approved standard should 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.

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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

- Appearance : paste
- Color : black
- Odor : aromatic
- Odor Threshold : No data available
- pH : Not applicable
- Melting point/range / Freezing point : No data available
- Boiling point/boiling range : No data available
- Flash point : Not applicable
- Evaporation rate : No data available
- Flammability (solid, gas) : No data available
- Upper explosion limit / Upper flammability limit : No data available
- Lower explosion limit / Lower flammability limit : No data available
- Vapor pressure : 7.9993 hpa
- Relative vapor density : No data available
- Density : 1.19 g/cm<sup>3</sup> (68 °F / 20 °C)
- Solubility(ies)  
Water solubility : insoluble
- Solubility in other solvents : No data available
- Partition coefficient: n-octanol/water : No data available




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Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	> 20.5 mm <sup>2</sup> /s (104 °F / 40 °C)
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Volatile organic compounds (VOC) content	:	64.1 g/l

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**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 reactions	:	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.

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**SECTION 11. TOXICOLOGICAL INFORMATION****Acute toxicity**

Not classified based on available information.

**Components:****xylene:**

Acute oral toxicity	:	LD50 Oral (Rat): 3,523 mg/kg
Acute dermal toxicity	:	LD50 Dermal (Rabbit): 1,700 mg/kg

**ethylbenzene:**

Acute oral toxicity	:	LD50 Oral (Rat): 3,500 mg/kg
Acute dermal toxicity	:	LD50 Dermal (Rabbit): 5,510 mg/kg

**4,4'-methylenediphenyl diisocyanate:**

Acute oral toxicity	:	LD50 Oral (Rat): > 5,000 mg/kg
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Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50: 1.5 mg/l  
 Exposure time: 4 h  
 Test atmosphere: dust/mist  
 Method: Expert judgment

**3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate:**

Acute oral toxicity : LD50 Oral (Rat): 4,814 mg/kg

Acute inhalation toxicity : LC50 (Rat): 0.031 mg/l  
 Exposure time: 4 h  
 Test atmosphere: dust/mist

Acute dermal toxicity : LD50 Dermal (Rat): > 7,000 mg/kg

**Skin corrosion/irritation**

Not classified based on available information.

**Serious eye damage/eye irritation**

Not classified based on available information.

**Respiratory or skin sensitization**

**Skin sensitization**

May cause an allergic skin reaction.

**Respiratory sensitization**

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

**Germ cell mutagenicity**

Not classified based on available information.

**Carcinogenicity**

Not classified based on available information.

<b>IARC</b>	Group 2B: Possibly carcinogenic to humans	
	Carbon black	1333-86-4
	Group 2B: Possibly carcinogenic to humans	
	ethylbenzene	100-41-4

**OSHA** Not applicable

**NTP** Not applicable

**Reproductive toxicity**

Not classified based on available information.

**STOT-single exposure**

Not classified based on available information.

**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 based on available information.

**Further information****Product:****Remarks**

: Carbon black (1333-86-4)

**Animal Toxicity:**

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 production workers in the UK (Sorahan, 2001) found an increased risk of lung cancer in two of the five plants 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 Sorahan, 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 (DEll, 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 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.

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## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Components:

##### **xylene:**

Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 2.2 mg/l Method: OECD Test Guideline 201
Toxicity to fish (Chronic toxicity)	:	NOEC (Oncorhynchus mykiss (rainbow trout)): > 1.3 mg/l Exposure time: 56 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia): 1.17 mg/l Exposure time: 7 d



**ethylbenzene:**

**Persistence and degradability**

No data available

**Bioaccumulative potential**

No data available

**Mobility in soil**

No data available

**Other adverse effects**

**Product:**

Additional ecological information : Do not empty into drains; dispose of this material and its container 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 handling 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 on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

**CERCLA Reportable Quantity**

Components	CAS-No.	Component RQ (lbs)
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xylene	1330-20-7	100
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**SARA 304 Extremely Hazardous Substances Reportable Quantity**

Listed substances in the product are at low enough levels to not be expected to exceed the 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 skin sensitization  
Specific target organ toxicity (single or repeated exposure)

**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

xylene	1330-20-7	>= 1 - < 5 %
ethylbenzene	100-41-4	>= 1 - < 5 %
4,4'-methylenediphenyl diisocyanate	101-68-8	>= 0.1 - < 1 %
3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate	4098-71-9	>= 0.1 - < 1 %

**Clean Air Act**

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 112 (40 CFR 61):

xylene	1330-20-7	>= 1 - < 5 %
ethylbenzene	100-41-4	>= 1 - < 5 %

**California Prop. 65**

**⚠ WARNING:** This product can expose you to chemicals including Carbon black, amorphous, which is known to the State of California to cause cancer, and 1,2-Benzenedicarboxylic acid, di-C9-11-branched alkyl esters, C10-rich, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**SECTION 16. OTHER INFORMATION****Full text of other abbreviations**

ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
OSHA P0	: USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	: 8-hour, time-weighted average
ACGIH / STEL	: Short-term exposure limit
OSHA P0 / TWA	: 8-hour time weighted average
OSHA P0 / STEL	: Short-term exposure limit



OSHA P0 / C : Ceiling limit  
OSHA Z-1 / TWA : 8-hour time weighted average  
OSHA Z-1 / C : Ceiling

**Notes to Reader**

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