

SAFETY DATA SHEET



Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)

Sikaflex®-221

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name : Sikaflex®-221

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

At present there is no complete information available on identified uses. When the data becomes available, it will be integrated into the safety data sheet.

Product use : Sealant/adhesive.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Distributor : Sika Limited
Watchmead Welwyn Garden City
Hertfordshire. AL7 1BQ
United Kingdom

Telephone no.: : 01707 394444

Fax no. : 01707 329129

e-mail address of person responsible for this SDS : EHS@uk.sika.com

Emergency telephone number : +44 (0)1707 363899 (available during office hours).

1.4 Emergency telephone number

Supplier

Telephone number : +44 (0)1707 363899 (available during office hours).

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Directive 1999/45/EC [DPD]

The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification : R42

Human health hazards : May cause sensitisation by inhalation.

See Section 16 for the full text of the R phrases or H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard symbol or symbols :



Indication of danger : Harmful

Risk phrases : R42- May cause sensitisation by inhalation.

Safety phrases : S23- Do not breathe gas/fumes/vapour/spray.
S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

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SECTION 2: Hazards identification

Hazardous ingredients : 4,4'-methylenediphenyl diisocyanate

Supplemental label elements : Contains isocyanates. See information supplied by the manufacturer.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles :

2.3 Other hazards

Other hazards which do not result in classification : Not available.

SECTION 3: Composition/information on ingredients

Substance/mixture : Mixture

Chemical family/Characteristics : Filled reactive PUR-polymer

Product/ingredient name Identifiers	%	Classification		Type
		67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]	
xylene RRN: 01-2119488216-32 EC: 215-535-7 CAS: 1330-20-7 Index: 601-022-00-9	>= 1 - < 5	R10 Xn; R20/21 Xi; R38	Flam. Liq. 3, H226 Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Irrit. 2, H315 Asp. Tox. 1, H304	[1] [2]
Hydrocarbons, C9-C12, n-alkanes, isoalkanes, cyclics, aromatics (2-25%) RRN: 01-2119458049-33 EC: 919-446-0	>= 0.25 - < 2.5	R10 Xn; R65 R66, R67 N; R51/53	Flam. Liq. 3, H226 STOT SE 3, H336i Asp. Tox. 1, H304 Aquatic Chronic 2, H411	[1]
4,4'-methylenediphenyl diisocyanate RRN: 01-2119457014-47 EC: 202-966-0 CAS: 101-68-8 Index: 615-005-00-9	>= 0.1 - < 1	Carc. Cat. 3; R40 Xn; R20, R48/20 Xi; R36/37/38 R42/43	Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335i STOT RE 2, H373	[1]
		See Section 16 for the full text of the R-phrases declared above.	See Section 16 for the full text of the H statements declared above.	

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs or vPvBs or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII

[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

SECTION 3: Composition/information on ingredients

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures**4.1 Description of first aid measures**

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Get medical attention if adverse health effects persist or are severe. Get medical attention if symptoms appear.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention if symptoms occur.
- Ingestion** : Do not induce vomiting unless directed to do so by medical personnel. Maintain an open airway. Seek immediate medical attention.

4.2 Most important symptoms and effects, both acute and delayed**Potential acute health effects**

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : May cause sensitisation by inhalation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : Adverse symptoms may include the following:
wheezing and breathing difficulties
asthma
- Skin contact** : No specific data.
- Ingestion** : No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.

SECTION 5: Firefighting measures**5.1 Extinguishing media**

- Suitable extinguishing media** : Use dry chemical, CO₂, water spray (fog) or foam.
- Unsuitable extinguishing media** : None known.

5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : In a fire or if heated, a pressure increase will occur and the container may burst.

SECTION 5: Firefighting measures

Hazardous thermal decomposition products : Decomposition products may include the following materials:
 carbon dioxide
 carbon monoxide
 nitrogen oxides
 halogenated compounds
 metal oxide/oxides

5.3 Advice for firefighters

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also Section 8 for additional information on hygiene measures.

6.2 Environmental precautions

: Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container.

Large spill : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13).

6.4 Reference to other sections

: See Section 1 for emergency contact information.
 See Section 8 for information on appropriate personal protective equipment.
 See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain

SECTION 7: Handling and storage

product residue and can be hazardous.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker or exposure or environmental releases.

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
xylene	EH40/2005 WELs (United Kingdom (UK), 1/2012). Absorbed through skin. STEL: 441 mg/m ³ 15 minute(s). STEL: 100 ppm 15 minute(s). TWA: 220 mg/m ³ 8 hour(s). TWA: 50 ppm 8 hour(s).
4,4'-methylenediphenyl diisocyanate	EH40/2005 WELs (United Kingdom (UK), 8/2007). Skin sensitiser. Notes: as NCO STEL: 0.07 mg/m ³ , (as NCO) 15 minute(s). TWA: 0.02 mg/m ³ , (as NCO) 8 hour(s).

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

DNELs/DMELs

No DELs available.

PNECs

No PECs available.

8.2 Exposure controls

SECTION 8: Exposure controls/personal protection

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Skin protection

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. Reference number EN 374. Suitable for short time use or protection against splashes: Butyl rubber/nitrile rubber gloves. (0,4 mm), breakthrough time <30 min. Contaminated gloves should be removed. Suitable for permanent exposure: Viton gloves (0.4 mm), breakthrough time >30 min.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: Use barrier skin cream.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.
organic vapour filter (Type A)
A1: < 1000 ppm; A2: < 5000 ppm; A3: < 10000 ppm

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties****Appearance**

Physical state : Paste.

Colour : Various.

Odour : Characteristic.

Odour threshold : Not available.

pH : Not available.

Melting point/freezing point : Not available.

Initial boiling point and boiling range : Not available.

Flash point : Closed cup: >101°C

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Burning time : Not applicable.

Burning rate : Not applicable.

SECTION 9: Physical and chemical properties

Upper/lower flammability or explosive limits	: Not applicable.
Vapour pressure	: Not applicable.
Vapour density	: Not available.
Density	: ~1.26 g/cm ³ [20°C (68°F)]
Relative density	: Not available.
Solubility(ies)	: Insoluble in the following materials: water
Partition coefficient: n-octanol/ water	: Not available.
Auto-ignition temperature	: Not applicable.
Decomposition temperature	: Not available.
Viscosity	: Dynamic: Not applicable. Kinematic (40°C): >0.205 cm ² /s
Explosive properties	: Not available.
Oxidising properties	: Not available.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: The product is stable.
10.3 Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: No specific data.
10.5 Incompatible materials	: No specific data.
10.6 Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute toxicity**

Product/ingredient name	Result	Species	Dose	Exposure
xylene	LD50 Dermal	Rat	1100 mg/kg	-
4,4'-methylenediphenyl diisocyanate	LC50 Inhalation Dusts and mists	Rat	1.5 mg/l	4 hours

Conclusion/Summary : Not available.

Irritation/Corrosion

Conclusion/Summary : Not available.

Sensitisation

Conclusion/Summary : Not available.

Mutagenicity

Conclusion/Summary : Not available.

SECTION 11: Toxicological information**Carcinogenicity**

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : May cause eye irritation.
 Inhalation : May cause sensitisation by inhalation.
 Skin contact : May cause skin irritation.
 Ingestion : Can cause gastrointestinal disturbances.

Delayed and immediate effects and also chronic effects from short and long term exposure**Short term exposure**

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

Conclusion/Summary : Not available.

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Other information : Not available.

SECTION 12: Ecological information**12.1 Toxicity**

Conclusion/Summary : Not available.

12.2 Persistence and degradability

Conclusion/Summary : Not available.

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
xylene	3.16	-	high

12.4 Mobility in soil

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SECTION 12: Ecological information

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Product**

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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.

Hazardous waste : Yes.

European waste catalogue (EWC)

Waste code	Waste designation
08 04 09*	waste adhesives and sealants containing organic solvents or other dangerous substances

Packaging : Completely emptied packaging or practically empty packaging containing dried/cured residues, once relieved of all pressure can be disposed of as non-hazardous waste.

Packaging may still contain hazardous residues and disposal should undertaken by a licensed waste contractor.

Any disposal practice must be in compliance with local and national laws and regulations.

European waste catalogue (EWC) (Packaging) : packaging containing residues of or contaminated by dangerous substances

SECTION 14: Transport information

	ADR/RID - ADN	IMDG	IATA
14.1 UN number	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name			
14.3 Transport hazard class(es)	-	-	-
14.4 Packing group	-	-	-
14.5 Environmental hazards	No	No	No

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SECTION 14: Transport information

Additional information	-	-	-
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14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed (=> 0.1 %).

Substances of very high concern

None of the components are listed (=> 0.1 %).

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

VOC content (EU) : VOC (w/w): 3.47%

Other EU regulations

REACH Information: : All substances contained in our Products are
 - preregistered or registered by our upstream suppliers, and/or
 - preregistered or registered by us, and/or
 - excluded from the regulation, and/or
 - exempted from the registration.

Europe inventory : Not available.

Product/ingredient name	Carcinogenic effects	Mutagenic effects	Developmental effects	Fertility effects
4,4'-methylenediphenyl diisocyanate	Carc. Cat. 3; R40	-	-	-

References : Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (CHIP 4)
 Control of Substances Hazardous to Health Regulations 2002 (COSHH) (as amended)
 Health & Safety at Work Act 1974
 The Environmental Protection (Duty of Care) Regulations 1991
 Hazardous waste regulations 2005
 The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2007

Guidance Publications : Approved Code of Practice - Management of Health and Safety at Work, HSE
 General Approved Code of Practice to COSHH Regulations, HSE.
 EH40, Workplace Exposure Limits, HSE (as updated).
 HS(G) 53, Respiratory Protection Equipment - a Practical Guide for Users, HSE.

15.2 Chemical Safety Assessment : This product contains substances for which Chemical Safety Assessments are still required.

SECTION 15: Regulatory information**SECTION 16: Other information**

✔ Indicates information that has changed from previously issued version.

Abbreviations and acronyms	: ATE = Acute Toxicity Estimate CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008] DNEL = Derived No Effect Level EUH statement = CLP-specific Hazard statement PNEC = Predicted No Effect Concentration RRN = REACH Registration Number
Full text of abbreviated H statements	: H226 Flammable liquid and vapour. H304 May be fatal if swallowed and enters airways. H312 Harmful in contact with skin. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H332 Harmful if inhaled. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H335i May cause respiratory irritation. H336i May cause drowsiness or dizziness. H351 Suspected of causing cancer. H373 May cause damage to organs through prolonged or repeated exposure. H411 Toxic to aquatic life with long lasting effects.
Full text of classifications [CLP/GHS]	: Acute Tox. 4, H312 ACUTE TOXICITY: SKIN - Category 4 Acute Tox. 4, H332 ACUTE TOXICITY: INHALATION - Category 4 Aquatic Chronic 2, H411 AQUATIC TOXICITY (CHRONIC) - Category 2 Asp. Tox. 1, H304 ASPIRATION HAZARD - Category 1 Carc. 2, H351 CARCINOGENICITY - Category 2 Eye Irrit. 2, H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2 Flam. Liq. 3, H226 FLAMMABLE LIQUIDS - Category 3 Resp. Sens. 1, H334 RESPIRATORY SENSITIZATION - Category 1 Skin Irrit. 2, H315 SKIN CORROSION/IRRITATION - Category 2 Skin Sens. 1, H317 SKIN SENSITIZATION - Category 1 STOT RE 2, H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 STOT SE 3, H335i SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE): INHALATION [Respiratory tract irritation] - Category 3 STOT SE 3, H336i SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE): INHALATION [Narcotic effects] - Category 3
Full text of abbreviated R phrases	: R10- Flammable. R40- Limited evidence of a carcinogenic effect. R20- Harmful by inhalation. R20/21- Harmful by inhalation and in contact with skin. R48/20- Harmful: danger of serious damage to health by prolonged exposure through inhalation. R65- Harmful: may cause lung damage if swallowed. R38- Irritating to skin. R36/37/38- Irritating to eyes, respiratory system and skin. R42- May cause sensitisation by inhalation. R42/43- May cause sensitisation by inhalation and skin contact. R66- Repeated exposure may cause skin dryness or cracking. R67- Vapours may cause drowsiness and dizziness. R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

SECTION 16: Other information

Full text of classifications [DSD/DPD] : Carc. Cat. 3 - Carcinogen category 3
Xn - Harmful
Xi - Irritant
N - Dangerous for the environment

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Notice to reader

The information contained in this Safety Data Sheet corresponds to our level of knowledge at the time of publication. All warranties are excluded. Our most current General Sales Conditions shall apply. Please consult the product data sheet prior to any use and processing.