

SAFETY DATA SHEET

Sikaflex®-291i



Version
4.0

Revision Date:
03.04.2025

SDS Number (Internal):
000000131725

Date of last issue: 11.05.2023
Date of first issue: 22.12.2015

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Sikaflex®-291i

Recommended use of the chemical and restrictions on use

Product use : Sealant/adhesive

Manufacturer or supplier's details

Company : Sika Korea Ltd.
724, Anseongmatchum-daero
Miyang-myeon
Anseong-si
Gyeonggi-do
Korea

Telephone : +82-31-8056-7777

Emergency telephone number : +82-31-8056-7777

E-mail address : ehs@kr.sika.com

Telefax : +82-31-8056-7788

2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Inhalation) : Category 1

Skin sensitisation : Category 1

Carcinogenicity : Category 2

Reproductive toxicity : Category 2

Specific target organ toxicity -
repeated exposure : Category 2

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

GHS label elements

Hazard pictograms :



Signal word : Danger

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Hazard statements : H317 May cause an allergic skin reaction.
H330 Fatal if inhaled.
H351 Suspected of causing cancer.
H361 Suspected of damaging fertility or the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.
H373 May cause damage to organs (Lungs) through prolonged or repeated exposure if inhaled.

Precautionary statements : P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P103 Read label before use.

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe mist or vapours.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P284 Wear respiratory protection.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of water.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal:

P501 Dispose of contents/ container according to waste-related laws

Other hazards which do not result in classification

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

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Substance / Mixture : Mixture

Components

Chemical name	Common Name	CAS-No.	Concentration (% w/w)
1,2-Benzenedicarboxylic acid, di-C9-11-branched alkyl esters, C10-rich	1,2-Benzenedicarboxylic acid, di-C9-11-branched alkyl esters, C10-rich	68515-49-1	>= 15 - < 20
Oxirane, methyl-, polymer with oxirane, ether with 1,2,3-propanetriol (3:1), polymer with 1,3-diisocyanatomethylbenzene	Oxirane, methyl-, polymer with oxirane, ether with 1,2,3-propanetriol (3:1), polymer with 1,3-diisocyanatomethylbenzene	57516-88-8	>= 10 - < 15
bis(2-ethylhexyl) adipate	bis(2-ethylhexyl) adipate	103-23-1	>= 5 - < 10
Urea,N,N''-(methylenedi-4,1-phenylene)bis[N'-butyl-	Urea,N,N''-(methylenedi-4,1-phenylene)bis[N'-butyl-	77703-56-1	>= 2.5 - < 5
Hardener LI (Isophoronedialdimine)	Hardener LI (Isophoronedialdimine)	932742-30-8	>= 0.25 - < 1
Reaction product of Hexamethylene diisocyanate, oligomers with Mercaptopropyltrimethoxysilane	Reaction product of Hexamethylene diisocyanate, oligomers with Mercaptopropyltrimethoxysilane	192526-20-8	>= 0.025 - < 0.25
bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	41556-26-7	>= 0.025 - < 0.25

4. FIRST AID MEASURES

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- General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
- In case of eye contact : Remove contact lenses.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- 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.
- If inhaled : Move to fresh air.
Consult a physician after significant exposure.
- If swallowed : Clean mouth with water and drink afterwards plenty of water.
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 : sensitising effects
Allergic reactions
See Section 11 for more detailed information on health effects and symptoms.
May cause an allergic skin reaction.
Fatal if inhaled.
Suspected of causing cancer.
Suspected of damaging fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.
- Notes to physician : Treat symptomatically.
-

5. FIREFIGHTING MEASURES

Suitable and unsuitable extinguishing media

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Hazardous combustion products : No hazardous combustion products are known
- Specific extinguishing methods : Standard procedure for chemical fires.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
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6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protection : Use personal protective equipment.
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- tive equipment and emergency procedures : Deny access to unprotected persons.
- Environmental precautions : Do not flush into surface water or sanitary sewer system.
- 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.
-

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 sensitisation 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.
-

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Personal protective equipment. Among the following personal protective equipment, the PPEs which require safety certification need to be certified by KOSHA.

- Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.
- Eye protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.
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- 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.
- 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 : Handle in accordance with good industrial hygiene and safety practice.
When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.
-

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : paste
- Colour : various
- Odour : very faint
- Odour Threshold : No data available
- pH : Not applicable substance/mixture is non-soluble (in water)
- Melting point/ range / Freezing point : No data available
- Boiling point/boiling range : No data available
- Flash point : > 150 °C (302 °F)
(Method: closed cup)
- Evaporation rate : No data available
- Flammability (solid, gas) : No data available

Upper/lower flammability or explosive limits

- Upper explosion limit / Upper flammability limit : No data available
- Lower explosion limit / Lower flammability limit : No data available
- Vapour pressure : 0.01 hPa
- Solubility(ies)
- Water solubility : insoluble
- Solubility in other solvents : No data available
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Density : ca. 1.38 g/cm³ (20 °C)

Partition coefficient: n-octanol/water : No data available

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Viscosity

 Viscosity, dynamic : Not applicable

 Viscosity, kinematic : Not applicable

Explosive properties : No data available

Oxidizing properties : No data available

10. STABILITY AND REACTIVITY

Chemical stability and possibility of hazardous reactions : Reactivity:
No dangerous reaction known under conditions of normal use.
Chemical stability:
The product is chemically stable.
Possibility of hazardous reactions:
No hazards to be specially mentioned.

Conditions to avoid : No data available

Incompatible materials : No data available

Hazardous decomposition products : No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : No data available

Health hazard information

Acute toxicity

Fatal if inhaled.

Components:

bis(2-ethylhexyl) adipate:

Acute oral toxicity : LD50 Oral (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 5.7 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

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Urea,N,N''-(methylenedi-4,1-phenylene)bis[N'-butyl-:

Acute oral toxicity : LD50 Oral (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 Dermal (Rabbit): > 2,000 mg/kg
Method: OECD Test Guideline 402

Hardener LI (Isophoronedialdimine):

Acute oral toxicity : LD50 Oral (Rat): > 2,000 mg/kg

Acute dermal toxicity : LD50 Dermal (Rabbit): > 2,000 mg/kg

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

Respiratory sensitisation

No data available

Skin sensitisation

May cause an allergic skin reaction.

Carcinogenicity

Suspected of causing cancer.

Components:

1,2-Benzenedicarboxylic acid, di-C9-11-branched alkyl esters, C10-rich:

No data available

Oxirane, methyl-, polymer with oxirane, ether with 1,2,3-propanetriol (3:1), polymer with 1,3-diisocyanatomethylbenzene:

No data available

bis(2-ethylhexyl) adipate:

No data available

Urea,N,N''-(methylenedi-4,1-phenylene)bis[N'-butyl-:

No data available

Hardener LI (Isophoronedialdimine):

No data available

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Reaction product of Hexamethylene diisocyanate, oligomers with Mercaptopropyltrimethoxysilane:

No data available

bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate:

No data available

Germ cell mutagenicity

No data available

Components:

1,2-Benzenedicarboxylic acid, di-C9-11-branched alkyl esters, C10-rich:

No data available

Oxirane, methyl-, polymer with oxirane, ether with 1,2,3-propanetriol (3:1), polymer with 1,3-diisocyanatomethylbenzene:

No data available

bis(2-ethylhexyl) adipate:

No data available

Urea,N,N''-(methylenedi-4,1-phenylene)bis[N'-butyl-:

No data available

Genotoxicity in vivo : Species: Bacteria
Method: OECD Test Guideline 471
Result: negative

Method: TA98

Method: TA100

Method: TA1535

Method: TA1537

Hardener LI (Isophoronedialdimine):

No data available

Reaction product of Hexamethylene diisocyanate, oligomers with Mercaptopropyltrimethoxysilane:

No data available

bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate:

No data available

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Reproductive toxicity

Suspected of damaging fertility or the unborn child.

Components:

1,2-Benzenedicarboxylic acid, di-C9-11-branched alkyl esters, C10-rich:

Suspected of damaging fertility or the unborn child.

Oxirane, methyl-, polymer with oxirane, ether with 1,2,3-propanetriol (3:1), polymer with 1,3-diisocyanatomethylbenzene:

No data available

bis(2-ethylhexyl) adipate:

No data available

Urea,N,N"-(methylenedi-4,1-phenylene)bis[N'-butyl-:

No data available

Hardener LI (Isophoronedialdimine):

No data available

Reaction product of Hexamethylene diisocyanate, oligomers with Mercaptopropyltrimethoxysilane:

No data available

bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate:

No data available

STOT - single exposure

No data available

STOT - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

May cause damage to organs (Lungs) through prolonged or repeated exposure if inhaled.

Repeated dose toxicity

No data available

Aspiration toxicity

No data available

Experience with human exposure

No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

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Further information

No data available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

bis(2-ethylhexyl) adipate:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 500 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Scenedesmus quadricauda (Green algae)): > 500 mg/l
Exposure time: 72 h

Urea,N,N''-(methylenedi-4,1-phenylene)bis[N'-butyl]-:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): > 250 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Raphidocelis subcapitata (freshwater green alga)): > 100 mg/l
Exposure time: 72 h

Hardener LI (Isophoronedialdimine):

Toxicity to fish : LC50 (Fish): 87.2 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia (water flea)): > 100 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 180.4 mg/l
Exposure time: 72 h

Reaction product of Hexamethylene diisocyanate, oligomers with Mercaptopropyltrimethoxysilane:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): > 100 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

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Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : There is no data available for this product.

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Send to a licensed waste management company.

Do not contaminate ponds, waterways or ditches with chemical or used container.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.

Do not re-use empty containers.

Disposal precautions

Dispose of contents and container according to wastes control act.

14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number : Not applicable
Proper shipping name : Not applicable
Class : Not applicable
Subsidiary risk : Not applicable
Packing group : Not applicable
Labels : Not applicable
Environmentally hazardous : no

IATA-DGR

UN/ID No. : Not applicable
Proper shipping name : Not applicable
Class : Not applicable
Subsidiary risk : Not applicable
Packing group : Not applicable
Labels : Not applicable

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Packing instruction (cargo aircraft) : Not applicable
Packing instruction (passenger aircraft) : Not applicable

IMDG-Code

UN number : Not applicable
Proper shipping name : Not applicable
Class : Not applicable
Subsidiary risk : Not applicable
Packing group : Not applicable
Labels : Not applicable
EmS Code : Not applicable
Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

Refer to section 15 for specific national regulation.

Special precautions for user

Not applicable

15. REGULATORY INFORMATION

National regulatory information

Regulation under the Occupational Safety and Health Act

Harmful Substances Prohibited from Manufacturing

Not applicable

Harmful Substances Required Permission for Manufacture

Not applicable

Harmful Agents to be kept below Occupational Exposure Limits

Chemical name	CAS-No.
Limestone	1317-65-3
Titanium dioxide	13463-67-7
Silica (Crystalline quartz)	14808-60-7

Harmful Agents Required to be kept below Permission Levels

Not applicable

Hazardous substances requiring management

Chemical name	CAS-No.	Threshold limits (%)
Titanium dioxide	13463-67-7	>= 1 %

Special Management Materials

Not applicable

Controlled Substances Subject to Environment Monitoring

Chemical name	CAS-No.	Threshold limits (%)
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Titanium dioxide	13463-67-7	>= 1 %
Silica	14808-60-7	

Controlled Substances Subject to Health Examination

Not applicable

Hazardous Substances Subject to Process Safety Management (PSM) Reporting Obligation

Not applicable

K-OSHA Hazardous Substances (Occupational Safety and Health Regulations, Table 1)

Category
Flammable liquid
Acute toxic substances (inhalation)

K-OSHA Hazardous Substances (Occupational Safety and Health Regulations, Table 9)

Category	Manufacturing or handling quantity
Flammable liquid	400 litre
Acute toxic substances (inhalation)	5 kilogram

Regulation under the Chemicals Control Act

Toxic Chemicals

Not applicable

Restricted Chemicals

Not applicable

Prohibited Chemicals

Not applicable

Toxic Release Inventory

Chemical name	CAS-No.	Group	Threshold limits (%)
Di(2-ethylhexyl) adipate	103-23-1	Group II	>= 1 %

Accident Precaution Chemicals

Not applicable

Dangerous Substances Safety Management Act

Classification : Group 4, Flammable liquids, Type 3 petroleums, Water insoluble liquid

Hazard rank : Hazardous rank III

Designated Quantity : 2000 litre

Safety Warning : Keep away from fire

International Chemical Weapons Convention (CWC) : Not applicable
Schedules of Toxic Chemicals and Precursors

라. Wastes Control Act

Industrial general wastes

Follow article 13 of the act to dispose the product waste

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Other requirements in domestic and other countries

The components of this product are reported in the following inventories:

ENCS : Not in compliance with the inventory
ISHL : Not in compliance with the inventory
KECI : Not in compliance with the inventory

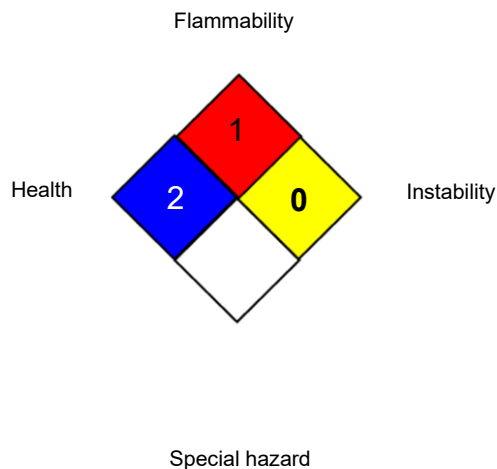
16. OTHER INFORMATION

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NFPA:



Full text of other abbreviations

ADR : European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS : Chemical Abstracts Service
DNEL : Derived no-effect level
EC50 : Half maximal effective concentration
GHS : Globally Harmonized System
IATA : International Air Transport Association
IMDG : International Maritime Code for Dangerous Goods
LD50 : Median lethal dose (the amount of a material, given all at once, which causes the death of 50% (one half) of a group of

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LC50	:	test animals) Median lethal concentration (concentrations of the chemical in air that kills 50% of the test animals during the observation period)
MARPOL	:	International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978
OEL	:	Occupational Exposure Limit
PBT	:	Persistent, bioaccumulative and toxic
PNEC	:	Predicted no effect concentration
REACH	:	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency
SVHC	:	Substances of Very High Concern
vPvB	:	Very persistent and very bioaccumulative

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.

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