



SikaBiresin® GC21 (formerly ES-221) Part B

Revision Date 01/27/2026

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SECTION 1. IDENTIFICATION

Product name : SikaBiresin® GC21 (formerly ES-221) Part B

Company name : Sika Corporation
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Lyndhurst, NJ 07071
USA
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Telephone : (201) 933-8800

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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)

Flammable liquids : Category 4

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 2

Skin corrosion : Sub-category 1B

Serious eye damage : Category 1

Skin sensitization : Category 1

Reproductive toxicity : Category 1B

Other hazards

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

GHS label elements



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Hazard pictograms :



Signal Word :

Danger

Hazard Statements :

H227 Combustible liquid.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H330 Fatal if inhaled.
H360 May damage fertility or the unborn child.

Supplemental Hazard Statements :

Corrosive to the respiratory tract.

Precautionary Statements :

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260 Do not breathe mist or vapors.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.
P284 Wear respiratory protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.



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P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.

P362 + P364 Take off contaminated clothing and wash it before reuse.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

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

P405 Store locked up.

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 $\geq 1\%$.

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./Unique ID	Classification	Concentration (% w/w)
Adduct XA-P (epoxy amine adduct, polymer)	110839-13-9	Acute Tox. 4; H302 Skin Sens. 1; H317	$\geq 15 - \leq 40$
2,2'-iminodiethylamine	111-40-0	Acute Tox. 4; H302 Acute Tox. 2; H330 Acute Tox. 4; H312 Skin Corr. 1B; H314 Skin Sens. 1; H317 STOT SE 3; H335	$\geq 15 - \leq 40$
4,4'-isopropylidenediphenol	80-05-7	Eye Dam. 1; H318 Skin Sens. 1; H317 Repr. 1B; H360 STOT SE 3; H335	$\geq 10 - \leq 30$
m-phenylenebis(methylamine)	1477-55-0	Acute Tox. 4; H302 Acute Tox. 4; H332 Skin Corr. 1B; H314 Skin Sens. 1B; H317	$\geq 7 - \leq 13$
1-methylimidazole	616-47-7	Flam. Liq. 4; H227 Acute Tox. 4; H302 Acute Tox. 3; H311 Skin Corr. 1B; H314 Eye Dam. 1; H318	$\geq 3 - \leq 7$



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2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine	25513-64-8	Repr. 2; H361 Acute Tox. 4; H302 Skin Corr. 1A; H314 Eye Dam. 1; H318 Skin Sens. 1A; H317	>= 1 - <= 5
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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.
Symptoms of poisoning may appear several hours later.
- 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.
Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
- In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Keep eye wide open while rinsing.
- 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.
Take victim immediately to hospital.
- Most important symptoms and effects, both acute and delayed : Health injuries may be delayed.
corrosive effects
sensitizing effects
toxic effects for reproduction
Gastrointestinal discomfort
Respiratory disorder
Allergic reactions
Headache
Dermatitis
Harmful if swallowed.
May cause an allergic skin reaction.
Causes serious eye damage.



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Fatal if inhaled.
May cause respiratory irritation.
May damage fertility or the unborn child.
Causes severe burns.

Notes to physician : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Foam
Dry powder
Carbon dioxide (CO₂)
Water spray
- Unsuitable extinguishing media : Water jet
- Hazardous combustion products : No hazardous combustion products are known
- 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.
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.



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- 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.
 Provide sufficient air exchange and/or exhaust in work rooms.
 Pregnant women or women of child-bearing age should not be exposed to this product.
 Follow standard hygiene measures when handling chemical products.
- Conditions for safe storage : Prevent unauthorized access.
 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.
- Materials to avoid : Explosives
 Oxidizing agents
 Poisonous gases
 Dangerous when wet
 Flammable solids
 Organic peroxides
 Poisonous liquids
 Spontaneously Combustible Substances

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
2,2'-iminodiethylamine	111-40-0	TWA	1 ppm	ACGIH
		TWA	1 ppm 4 mg/m ³	OSHA P0
m-phenylenebis(methylamine)	1477-55-0	C	0.018 ppm	ACGIH
		C	0.1 mg/m ³	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.



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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.
The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive 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 respiratory and skin/eye protection only after vapors have been cleared from the area.
Remove contaminated clothing and protective equipment before entering eating areas.
Wash thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : liquid
Color : clear, amber
Odor : amine-like
Odor Threshold : No data available



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pH	:	not determined
Melting point/ range / Freezing point	:	No data available
Boiling point/boiling range	:	388 °F / 198 °C
Flash point	:	198 °F / 92 °C (Method: closed cup)
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Autoignition temperature	:	325 °C
Upper explosion limit / Upper flammability limit	:	Upper explosion limit 10 %(V)
Lower explosion limit / Lower flammability limit	:	Lower explosion limit 1 %(V)
Vapor pressure	:	0.5 hpa (68 °F / 20 °C)
Relative vapor density	:	No data available
Density	:	1.05 g/cm ³ (68 °F / 20 °C)
Solubility(ies)		
Water solubility	:	soluble
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		
Dynamic	:	No data available
Kinematic	:	> 20.55 mm ² /s (104 °F / 40 °C)
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Particle size	:	No data available
Particle Size Distribution	:	No data available



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Volatile organic compounds : 3.2 g/l
(VOC) content SikaBiresin® GC221 (A) + SikaBiresin® GC21 (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 reactions : Stable under recommended storage conditions.

Conditions to avoid : No data available

Incompatible materials : No data available

Hazardous decomposition products : No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Harmful if swallowed.
Fatal if inhaled.

Components:

Adduct XA-P (epoxy amine adduct, polymer):

Acute oral toxicity : LD50 Oral (Rat): 300 - 2,000 mg/kg
Method: OECD Test Guideline 423

2,2'-iminodiethylamine:

Acute oral toxicity : LD50 Oral (Rat): 1,553 mg/kg

Acute inhalation toxicity : LC50 (Rat): 0.071 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 Dermal (Rat): 1,045 mg/kg

m-phenylenebis(methylamine):

Acute oral toxicity : LD50 Oral (Rat): 930 mg/kg

Acute inhalation toxicity : LC50 (Rat): 1.34 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: Corrosive to the respiratory tract.



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Acute dermal toxicity : LD50 Dermal (Rat): > 3,100 mg/kg

1-methylimidazole:

Acute oral toxicity : LD50 Oral (Rat): 1,144 mg/kg

Acute dermal toxicity : LD50 Dermal (Rat): 400 mg/kg

2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

Acute oral toxicity : LD50 Oral (Rat): 910 mg/kg

Skin corrosion/irritation

Causes severe burns.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitization

Skin sensitization

May cause an allergic skin reaction.

Respiratory sensitization

Not classified due to lack of data.

Germ cell mutagenicity

Not classified due to lack of data.

Carcinogenicity

Not classified due to lack of data.

IARC Not applicable

OSHA Not applicable

NTP Not applicable

Reproductive toxicity

May damage fertility or the unborn child.

STOT-single exposure

Corrosive to the respiratory tract.

STOT-repeated exposure

Not classified due to lack of data.

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

Aspiration toxicity

Not classified due to lack of data.



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SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

4,4'-isopropylidenediphenol:

m-phenylenebis(methylamine):

Toxicity to fish : LC50 (*Oryzias latipes* (Japanese medaka)): > 10 - 100 mg/l
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (*Daphnia magna* (Water flea)): > 10 - 100 mg/l
aquatic invertebrates Exposure time: 48 h

2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

Toxicity to algae/aquatic : EC50 (*Scenedesmus capricornutum* (fresh water algae)): 29.5
plants mg/l

Toxicity to fish (Chronic tox- : LC50 (*Leuciscus idus* (Golden orfe)): 174 mg/l
icity) Exposure time: 48 h

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological infor- : Do not empty into drains; dispose of this material and its con-
mation tainer in a safe way.
Avoid dispersal of spilled material and runoff and contact with
soil, waterways, drains and sewers.
Toxic to aquatic organisms, may cause long-term adverse
effects in the aquatic environment.
May be harmful to the environment if released in large quanti-
ties.
Water polluting material.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Disposal of this product, solutions and any by-products should



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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

UN/ID No. : UN 2735
Proper shipping name : Amines, liquid, corrosive, n.o.s.
(2,2'-iminodiethylamine)
Class : 8
Packing group : II
Labels : Corrosive
Packing instruction (cargo aircraft) : 855
Packing instruction (passenger aircraft) : 851
Environmentally hazardous : yes

IMDG-Code

UN number : UN 2735
Proper shipping name : AMINES, LIQUID, CORROSIVE, N.O.S.
(2,2'-iminodiethylamine, 4,4'-isopropylidenediphenol)
Class : 8
Packing group : II
Labels : 8
EmS Code : F-A, S-B
Marine pollutant : yes

Domestic regulation

49 CFR Road

UN/ID/NA number : UN 2735
Proper shipping name : Amines, liquid, corrosive, n.o.s.
(2,2'-iminodiethylamine)
Class : 8
Packing group : II
Labels : CORROSIVE
ERG Code : 153
Marine pollutant : no

DOT: For Limited Quantity exceptions reference 49 CFR 173.154 (b)

IMDG: For Limited Quantity special provisions reference IMDG Code Chapter 3.4



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Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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

This material does not contain any components with a CERCLA RQ.

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 : Flammable (gases, aerosols, liquids, or solids)
Acute toxicity (any route of exposure)
Respiratory or skin sensitization
Reproductive toxicity
Serious eye damage or eye irritation
Skin corrosion or irritation

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

4,4'-isopropylidenediphenol	80-05-7	>= 10 - < 20 %
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Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

California Prop. 65



WARNING: This product can expose you to chemicals including 4,4'-isopropylidenediphenol, 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.



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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)
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / C	:	Ceiling limit
OSHA P0 / TWA	:	8-hour time weighted average
OSHA P0 / C	:	Ceiling limit

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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