



Safety Data Sheet

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Pattex Barrita Arreglatodo

SDS No. : 205819

V001.1

Henkel Japan Ltd.

Revision: 05.09.2024

printing date: 19.05.2025

1. Identification of the substance/preparation and of the company/undertaking

Product code: 1717662
Product name: Pattex Barrita Arreglatodo
Recommended use : Epoxy adhesive

Company name:
Henkel Japan Ltd.
Sphere Tower Tennoz 14F 2-2-8
Higashi-Shinagawa, Shinagawa-ku, Tokyo
140-0002
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2. Hazards identification

GHS Classification:

| <u>Hazard Class</u> | <u>Hazard Category</u> |
|--|------------------------|
| Skin irritation | Category 2 |
| Serious eye damage/eye irritation | Category 2 |
| Skin Sensitization | Category 1 |
| Acute hazards to the aquatic environment | Category 3 |
| Chronic hazards to the aquatic environment | Category 3 |

GHS label elements:

Hazard pictogram:



Signal word:

Warning

| | |
|--------------------------|---|
| Hazard statement: | H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H412 Harmful to aquatic life with long lasting effects. |
| Prevention: | P261 Avoid breathing dust. P264 Wash skin thoroughly after handling. P272 Contaminated work clothing should not be allowed out of the workplace. P273 Avoid release to the environment. |
| Response: | P280 Wear protective gloves, eye protection, and face protection. P302+P352 IF ON SKIN: Wash with plenty of water. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P333+P313 If skin irritation or rash occurs: Get medical advice/attention. P337+P313 If eye irritation persists: Get medical advice/attention. P362+P364 Take off contaminated clothing and wash it before reuse. |
| Disposal: | P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal. |

The hazard information in product label may be differing with SDS information.

3. Composition / information on ingredients

Single substance/ Mixture: Mixture

Hazardous Components and Concentration

| Ingredients | contents |
|---|-----------------|
| Calcium sulfate (1:1) dihydrate | >= 50 - < 60 % |
| Poly[oxy(methyl-1,2-ethanediyl)], a-hydro-w-hydroxy-, ether with 2,2-bis(hydroxymethyl)-1,3-propanediol (4:1), 2-hydroxy-3-mercaptopropyl ether | >= 10 - < 20 % |
| Talc | >= 10 - < 20 % |
| 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 | >= 5 - < 10 % |
| Titanium dioxide < 1% particles with diameter ≤ 10 μm | >= 1 - < 10 % |
| Poly[oxy(methyl-1,2-ethanediyl)], a-(oxiranylmethyl)-w-(oxiranylmethoxy)- | >= 0.25 - < 1 % |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) | >= 0.25 - < 1 % |

4. First aid measures

| | |
|------------------------------|---|
| Case of skin contact: | Rinse with running water and soap. Apply replenishing cream. Change all contaminated clothing. If necessary, see a dermatologist. |
| Case of eye contact: | Immediately flush eyes with soft jet of water or eye rinse solution for at least 5 minutes. If pains remain (intensive smarting, sensitivity to light, visual disturbance) continue flushing and contact/seek doctor or hospital. |
| Case of ingestion: | Rinse mouth and throat. Drink 1-2 glasses of water. Seek medical advice. |
| Case of inhalation: | Move to fresh air, consult doctor if complaint persists. |

5. Fire fighting measures

Suitable extinguishing media: carbon dioxide, foam, powder, water spray jet, fine water spray

Extinguishing media that can not be used: High pressure waterjet

Protective equipment: Wear protective equipment.
Wear self-contained breathing apparatus.

6. Accidental release measures

Personal precautions: Avoid contact with skin and eyes.
Wear protective equipment.
Ensure adequate ventilation.

Environmental precautions: Do not empty into drains / surface water / ground water.

Measures for removal: Remove mechanically.
Dispose of contaminated material as waste according to Section 13.

7. Handling and storage

Handling:
Precautions for safe handling: Ensure that workrooms are adequately ventilated.

Avoid skin and eye contact.

Storage:
Conditions for safe storage: Keep only in original container.
Store in a cool, dry place.
Temperatures between + 5 °C and + 30 °C.
Keep away from heat and direct sunlight.

Storage:
Conditions for safe storage: Keep only in original container.
Keep container tightly sealed.
Store in a cool, dry place.

8. Exposure controls / personal protection

Component exposure limits:
Japan OELs JSOH

| Ingredient [Regulated substance] | ppm | mg/m ³ | Value type | Short term exposure limit category / Remarks | Regulatory list |
|----------------------------------|-----|-------------------|------------|--|-----------------|
| | | | | | |

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| | | | | | |
|--|--|-------|------------------------------|--|------------|
| Calcium sulfate [Sandstone, rock, mineral, metal and carbon dust] | | 0.025 | Threshold Limit Value: | The exposure limit is calculated from the equation, $3.0/(1.19*(\% \text{ free silica})+1)$ using a value of 100% free silica. Lower percentages of free silica will yield higher exposure limits. | JPISHL OEL |
| Calcium sulfate [Inorganic and organic dusts other than Classes 1 and 2, respirable dust] | | 2 | Time Weighted Average (TWA): | | JPISOH OEL |
| Calcium sulfate [Inorganic and organic dusts other than Classes 1 and 2, total dust] | | 8 | Time Weighted Average (TWA): | | JPISOH OEL |
| Talc (Mg ₃ H ₂ (SiO ₃) ₄) [Talc containing asbestos fiber- and crystalline silica-free (Total particulate matter)] | | 4 | Time Weighted Average (TWA): | Provisional value. | JPISOH OEL |
| Talc (Mg ₃ H ₂ (SiO ₃) ₄) [Talc containing asbestos fiber- and crystalline silica-free (Respirable particulate matter)] | | 1 | Time Weighted Average (TWA): | Provisional value. | JPISOH OEL |
| Titanium dioxide [Sandstone, rock, mineral, metal and carbon dust] | | 0.025 | Threshold Limit Value: | The exposure limit is calculated from the equation, $3.0/(1.19*(\% \text{ free silica})+1)$ using a value of 100% free silica. Lower percentages of free silica will yield higher exposure limits. | JPISHL OEL |
| Titanium dioxide [Titanium dioxide (asTi)] | | 1.5 | Time Weighted Average (TWA): | | JPISOH OEL |
| Titanium dioxide [Titanium dioxide (nanoparticle)] | | 0.3 | Time Weighted Average (TWA): | | JPISOH OEL |
| Titanium dioxide [Titanium dioxide (asTi)] | | 2 | Time Weighted Average (TWA): | | JPISOH OEL |

Component exposure limits:
REFERENCES

| Ingredient [Regulated substance] | ppm | mg/m ³ | Value type | Short term exposure limit category / Remarks | Regulatory list |
|----------------------------------|-----|-------------------|------------|--|-----------------|
|----------------------------------|-----|-------------------|------------|--|-----------------|

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| | | | | | |
|---|--|-----|------------------------------|--|-------|
| Calcium sulfate (1:1) dihydrate [CALCIUM SULFATE, INHALABLE FRACTION] | | 10 | Time Weighted Average (TWA): | | ACGIH |
| Talc [TALC, CONTAINING NO ASBESTOS FIBERS, RESPIRABLE FRACTION] | | 2 | Time Weighted Average (TWA): | The value is for particulate matter containing no asbestos and <1% crystalline silica. | ACGIH |
| Titanium dioxide < 1% particles with diameter ≤ 10 μm [Titanium dioxide, nanoscale particles, respirable fraction] | | 0.2 | Time Weighted Average (TWA): | | ACGIH |
| Titanium dioxide < 1% particles with diameter ≤ 10 μm [Titanium dioxide, finescale particles, respirable fraction] | | 2.5 | Time Weighted Average (TWA): | | ACGIH |

Indications for system design: Ensure good ventilation/extraction.

9. Physical and chemical properties

| | | | |
|---|--|----------------------------|--|
| Physical state: | solid | Color: | Blue, white |
| pH: | Not available., Product is non-soluble (in water). | Odor: | Blue, white specific characteristic |
| Boiling point: | > 200 °C (> 392 °F)Not available. | Melting point: | < -20 °C (< -4 °F)Not available. |
| Vapor density: | Not applicable, Product is a solid. | Density: | 1.77 g/cm ³ - 1.9 g/cm ³ |
| Flash point: | Not applicable | Vapor pressure: | Not applicable or not available |
| Lower explosive limit: | Not applicable or not available | Upper explosive limit: | Not applicable or not available |
| Solubility in water: | Not applicable or not available | Viscosity: | Not applicable or not available |
| Auto-ignition temperature: | Not applicable or not available | Flammability: | The product is not flammable. |
| Octanol / water distribution coefficient: | Not applicable or not available | Decomposition temperature: | > 375 °C |
| Particle characteristics | Not applicable or not available | | |

10. Stability and reactivity**Stability:****Reactivity:**

Reacts with alcohols and amines.
Reacts with oxidants, acids and lyes
Reaction with some curing agents may produce an exothermic reaction which in large masses could cause runaway polymerization.

Chemical stability:

Stable under recommended storage conditions.

Condition to avoid:

None if used for intended purpose.

Hazardous decomposition products:

None known.

11. Toxicological information**General toxicological information:**

Cross-reactions with other epoxide compounds possible.
Persons suffering from allergic reactions to epoxides should avoid contact with the product.

11.1. Information on toxicological effects**Acute oral toxicity:**

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances | Value type | Value | Species | Method |
|---|------------|---------------|---------|---|
| Calcium sulfate (1:1) dihydrate | LD50 | 10,000 mg/kg | rat | equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity) |
| Poly[oxy(methyl-1,2-ethanediyl)], a-hydro-w-hydroxy-, ether with 2,2-bis(hydroxymethyl)-1,3-propanediol (4:1), 2-hydroxy-3-mercaptopropyl ether | LD50 | 2,600 mg/kg | rat | equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity) |
| Talc | LD50 | > 5,000 mg/kg | rat | OECD Guideline 423 (Acute Oral toxicity) |
| 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight \leq 700 | LD50 | > 2,000 mg/kg | rat | OECD Guideline 420 (Acute Oral Toxicity) |
| Titanium dioxide < 1% particles with diameter \leq 10 μ m | LD50 | > 5,000 mg/kg | rat | OECD Guideline 425 (Acute Oral Toxicity: Up-and-Down Procedure) |
| Poly[oxy(methyl-1,2-ethanediyl)], a-(oxiranylmethyl)-w-(oxiranylmethoxy)- | LD50 | > 4,000 mg/kg | rat | not specified |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight \leq 700) | LD50 | > 5,000 mg/kg | rat | equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity) |

Acute dermal toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances | Value type | Value | Species | Method |
|---|------------|---------------------|---------|---|
| Poly[oxy(methyl-1,2-ethanediyl)], a-hydro-w-hydroxy-, ether with 2,2-bis(hydroxymethyl)-1,3-propanediol (4:1), 2-hydroxy-3-mercaptopropyl ether | LD50 | > 10,200 mg/kg | rabbit | equivalent or similar to OECD Guideline 402 (Acute Dermal Toxicity) |
| Talc | LD50 | > 2,000 mg/kg | rat | OECD Guideline 402 (Acute Dermal Toxicity) |
| 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight \leq 700 | LD50 | > 2,000 mg/kg | rat | OECD Guideline 402 (Acute Dermal Toxicity) |
| Titanium dioxide < 1% particles with diameter \leq 10 μ m | LD50 | \geq 10,000 mg/kg | hamster | not specified |
| Poly[oxy(methyl-1,2-ethanediyl)], a-(oxiranylmethyl)-w-(oxiranylmethoxy)- | LD50 | > 2,000 mg/kg | rabbit | not specified |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight \leq 700) | LD50 | > 2,000 mg/kg | rat | equivalent or similar to OECD Guideline 402 (Acute Dermal Toxicity) |

Acute inhalative toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances | Value type | Value | Test atmosphere | Exposure time | Species | Method |
|---|------------|-------------|-----------------|---------------|---------|--|
| Talc | LC50 | > 2.1 mg/l | dust/mist | 4 h | rat | OECD Guideline 403 (Acute Inhalation Toxicity) |
| Titanium dioxide < 1% particles with diameter ≤ 10 µm | LC50 | > 6.82 mg/l | dust | 4 h | rat | not specified |

Skin corrosion/irritation:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances | Result | Exposure time | Species | Method |
|--|---------------------|---------------|---------|---|
| Calcium sulfate (1:1) dihydrate | not irritating | 4 h | rabbit | OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |
| Poly[oxy(methyl-1,2-ethanediyl), a-hydroxy-hydroxy-, ether with 2,2-bis(hydroxymethyl)-1,3-propanediol (4:1), 2-hydroxy-3-mercaptopropyl ether | not irritating | 4 h | rabbit | OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |
| Talc | slightly irritating | 4 h | rabbit | OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |
| 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 | slightly irritating | 4 h | rabbit | OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |
| Titanium dioxide < 1% particles with diameter ≤ 10 µm | not irritating | 4 h | rabbit | equivalent or similar to OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) | irritating | 4 h | rabbit | equivalent or similar to OECD Guideline 404 (Acute Dermal Irritation / Corrosion) |

Serious eye damage/irritation:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances | Result | Exposure time | Species | Method |
|---|---------------------|---------------|---------|--|
| Calcium sulfate (1:1) dihydrate | not irritating | | rabbit | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| Poly[oxy(methyl-1,2-ethanediyl)], a-hydro-w-hydroxy-, ether with 2,2-bis(hydroxymethyl)-1,3-propanediol (4:1), 2-hydroxy-3-mercaptopropyl ether | not irritating | | rabbit | equivalent or similar to OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| Talc | not irritating | | rabbit | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 | slightly irritating | | rabbit | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| Titanium dioxide < 1% particles with diameter $\leq 10 \mu\text{m}$ | not irritating | | rabbit | OECD Guideline 405 (Acute Eye Irritation / Corrosion) |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) | not irritating | | rabbit | equivalent or similar to OECD Guideline 405 (Acute Eye Irritation / Corrosion) |

Respiratory or skin sensitization:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

| Hazardous substances | Result | Test type | Species | Method |
|---|-------------------------------|------------------------------------|------------|--|
| Calcium sulfate (1:1) dihydrate | not sensitising | Buehler test | guinea pig | OECD Guideline 406 (Skin Sensitisation) |
| Poly[oxy(methyl-1,2-ethanediyl)], a-hydro-w-hydroxy-, ether with 2,2-bis(hydroxymethyl)-1,3-propanediol (4:1), 2-hydroxy-3-mercaptopropyl ether | Sub-Category 1B (sensitising) | Mouse local lymphnode assay (LLNA) | mouse | OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay) |
| Talc | not sensitising | Guinea pig maximisation test | guinea pig | OECD Guideline 406 (Skin Sensitisation) |
| 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 | sensitising | Mouse local lymphnode assay (LLNA) | mouse | OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay) |
| Titanium dioxide < 1% particles with diameter $\leq 10 \mu\text{m}$ | not sensitising | Mouse local lymphnode assay (LLNA) | mouse | equivalent or similar to OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay) |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) | Sub-Category 1A (sensitising) | Mouse local lymphnode assay (LLNA) | mouse | OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay) |

Germ cell mutagenicity:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

| Hazardous substances | Result | Type of study / Route of administration | Metabolic activation / Exposure time | Species | Method |
|--|----------|--|--------------------------------------|---------|---|
| Calcium sulfate (1:1) dihydrate | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| Calcium sulfate (1:1) dihydrate | negative | mammalian cell gene mutation assay | with and without | | OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) |
| Talc | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| Talc | negative | in vitro mammalian cell transformation assay | without | | equivalent or similar to OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test) |
| 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 472 (Genetic Toxicology: Escherichia coli, Reverse Mutation Assay) |
| Titanium dioxide < 1% particles with diameter $\leq 10 \mu\text{m}$ | negative | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| Titanium dioxide < 1% particles with diameter $\leq 10 \mu\text{m}$ | negative | in vitro mammalian chromosome aberration test | with and without | | OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test) |
| Titanium dioxide < 1% particles with diameter $\leq 10 \mu\text{m}$ | negative | mammalian cell gene mutation assay | with and without | | OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test) |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) | positive | bacterial reverse mutation assay (e.g Ames test) | with and without | | OECD Guideline 471 (Bacterial Reverse Mutation Assay) |
| Calcium sulfate (1:1) dihydrate | negative | oral: feed | | mouse | OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test) |
| Talc | negative | oral: gavage | | rat | equivalent or similar to OECD Guideline 478 (Genetic Toxicology: Rodent Dominant Lethal Test) |
| 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 | negative | oral: gavage | | mouse | not specified |
| Titanium dioxide < 1% particles with diameter $\leq 10 \mu\text{m}$ | negative | oral: gavage | | mouse | OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test) |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) | negative | oral: gavage | | mouse | OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test) |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) | negative | oral: gavage | | rat | OECD Guideline 486 (Unscheduled DNA Synthesis (UDS) Test with Mammalian Liver Cells in vivo) |

Carcinogenicity

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

| Hazardous components | Result | Route of application | Exposure time / Frequency of treatment | Species | Sex | Method |
|--|------------------|----------------------|--|---------|-------------|--|
| 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight \leq 700 | not carcinogenic | dermal | 2 y daily | mouse | male | OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies) |
| 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight \leq 700 | not carcinogenic | oral: gavage | 2 y daily | rat | male/female | OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies) |
| Titanium dioxide < 1% particles with diameter \leq 10 μ m | not carcinogenic | inhalation | 24 m 6 h/d; 5 d/w | rat | male/female | OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies) |

Reproductive toxicity:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

| Hazardous substances | Result / Value | Test type | Route of application | Species | Method |
|--|---|----------------------|----------------------|---------|--|
| Calcium sulfate (1:1) dihydrate | NOAEL P > 1,000 mg/kg NOAEL F1 1,000 mg/kg | screening | oral: gavage | rat | OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test) |
| Talc | NOAEL P > 900 mg/kg NOAEL F1 > 900 mg/kg | two-generation study | oral: gavage | rabbit | equivalent or similar to OECD Guideline 416 (Two-Generation Reproduction Toxicity Study) |
| 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight \leq 700 | NOAEL P \geq 50 mg/kg NOAEL F1 \geq 750 mg/kg NOAEL F2 \geq 750 mg/kg | Two generation study | oral: gavage | rat | OECD Guideline 416 (Two-Generation Reproduction Toxicity Study) |
| Titanium dioxide < 1% particles with diameter \leq 10 μ m | NOAEL P > 1,000 mg/kg NOAEL F1 > 1,000 mg/kg | | oral: gavage | rat | OECD Guideline 421 (Reproduction / Developmental Toxicity Screening Test) |
| Reaction product: bisphenol-F- (epichlorhydrin); epoxy resin (number average molecular weight \leq 700) | NOAEL P > 750 mg/kg NOAEL F1 750 mg/kg NOAEL F2 750 mg/kg | two-generation study | oral: gavage | rat | OECD Guideline 416 (Two-Generation Reproduction Toxicity Study) |

STOT-single exposure:

No data available.

STOT-repeated exposure:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

| Hazardous substances | Result / Value | Route of application | Exposure time / Frequency of treatment | Species | Method |
|--|-------------------|----------------------|--|---------|--|
| Calcium sulfate (1:1) dihydrate | NOAEL 100 mg/kg | oral: gavage | 35-45 d daily | rat | OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test) |
| Talc | NOAEL 100 mg/kg | oral: feed | 101 d 7 d/w | rat | equivalent or similar to OECD Guideline 452 (Chronic Toxicity Studies) |
| 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight \leq 700 | NOAEL 50 mg/kg | oral: gavage | 14 w daily | rat | OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) |
| Titanium dioxide < 1% particles with diameter \leq 10 μ m | NOAEL 1,000 mg/kg | oral: gavage | 90 d daily | rat | OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) |
| Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight \leq 700) | NOAEL 250 mg/kg | oral: gavage | 13 w daily | rat | OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) |

Aspiration hazard:

No data available.

12. Ecological information

General ecological information:

Do not empty into drains / surface water / ground water.

12.1. Toxicity

Toxicity (Fish):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances | Value type | Value | Exposure time | Species | Method |
|---|------------|-----------------------------|---------------|---|--|
| Calcium sulfate (1:1) dihydrate | LC50 | > 100 mg/l | 96 h | Oryzias latipes | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Pentaerythritol-PO-mercaptoglycerol | LC50 | 87 mg/l | 96 h | Danio rerio | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Talc | LC50 | Toxicity > Water solubility | 96 h | Brachydanio rerio (new name: Danio rerio) | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane | LC50 | 1.75 mg/l | 96 h | Oncorhynchus mykiss | OECD Guideline 203 (Fish, Acute Toxicity Test) |
| Titanium dioxide < 1% particles with diameter ≤ 10 µm | LC50 | Toxicity > Water solubility | 48 h | Danio rerio | other guideline: |
| Titanium dioxide < 1% particles with diameter ≤ 10 µm | NOEC | Toxicity > Water solubility | 8 d | Danio rerio | OECD Guideline 212 (Fish, Short-term Toxicity Test on Embryo and Sac-Fry Stages) |
| Bisphenol-F epichlorhydrin resin; MW<700 | LC50 | 5.7 mg/l | 96 h | Leuciscus idus | OECD Guideline 203 (Fish, Acute Toxicity Test) |

Toxicity (aquatic invertebrates):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances | Value type | Value | Exposure time | Species | Method |
|---|------------|-----------------------------|---------------|---------------|--|
| Calcium sulfate (1:1) dihydrate | EC50 | > 100 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| Pentaerythritol-PO-mercaptoglycerol | EC50 | 12 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane | EC50 | 1.7 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| Titanium dioxide < 1% particles with diameter ≤ 10 µm | EC50 | Toxicity > Water solubility | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |
| Bisphenol-F epichlorhydrin resin; MW<700 | EC50 | 2.55 mg/l | 48 h | Daphnia magna | OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) |

Chronic toxicity (aquatic invertebrates):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances | Value type | Value | Exposure time | Species | Method |
|---|------------|----------|---------------|---------------|---|
| Pentaerythritol-PO-mercaptoglycerol | NOEC | 3.5 mg/l | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |
| 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane | NOEC | 0.3 mg/l | 21 d | Daphnia magna | OECD 211 (Daphnia magna, Reproduction Test) |
| Bisphenol-F epichlorhydrin | NOEC | 0.3 mg/l | 21 d | Daphnia magna | OECD 211 (Daphnia |

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| | | | | | |
|---------------|--|--|--|--|---------------------------|
| resin; MW<700 | | | | | magna, Reproduction Test) |
|---------------|--|--|--|--|---------------------------|

Toxicity (Algae):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances | Value type | Value | Exposure time | Species | Method |
|--|------------|-----------------------------|---------------|---|---|
| Calcium sulfate (1:1) dihydrate | EC50 | > 100 mg/l | 72 h | Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata) | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Pentaerythritol-PO-mercaptoglycerol | EC50 | > 733 mg/l | 72 h | Desmodesmus subspicatus | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Pentaerythritol-PO-mercaptoglycerol | NOEC | 338 mg/l | 72 h | Desmodesmus subspicatus | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 2,2'-(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane | EC50 | > 11 mg/l | 72 h | Scenedesmus capricornutum | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| 2,2'-(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane | NOEC | 4.2 mg/l | 72 h | Scenedesmus capricornutum | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Titanium dioxide < 1% particles with diameter ≤ 10 µm | EC50 | Toxicity > Water solubility | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Titanium dioxide < 1% particles with diameter ≤ 10 µm | NOEC | Toxicity > Water solubility | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |
| Bisphenol-F epichlorhydrin resin; MW<700 | EC50 | 1.8 mg/l | 72 h | Pseudokirchneriella subcapitata | OECD Guideline 201 (Alga, Growth Inhibition Test) |

Toxicity (microorganisms):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

| Hazardous substances | Value type | Value | Exposure time | Species | Method |
|--|------------|-----------------------------|---------------|---|--|
| Calcium sulfate (1:1) dihydrate | EC0 | Toxicity > Water solubility | 30 min | Pseudomonas putida | DIN 38412, part 27 (Bacterial oxygen consumption test) |
| Pentaerythritol-PO-mercaptoglycerol | EC50 | > 1,000 mg/l | 3 h | activated sludge of a predominantly domestic sewage | OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test) |
| 2,2'-(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane | IC50 | > 100 mg/l | 3 h | activated sludge, industrial | other guideline: |
| Titanium dioxide < 1% particles with diameter ≤ 10 µm | EC50 | Toxicity > Water solubility | 3 h | activated sludge | ISO 8192 (Test for Inhibition of Oxygen Consumption by Activated Sludge) |
| Bisphenol-F epichlorhydrin resin; MW<700 | IC50 | > 100 mg/l | 3 h | activated sludge, industrial | other guideline: |

12.2. Persistence and degradability

| Hazardous substances | Result | Test type | Degradability | Exposure time | Method |
|--|----------------------------|-----------|---------------|---------------|---|
| Pentaerythritol-PO-mercaptoglycerol | not readily biodegradable. | aerobic | 5 % | 28 d | OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test) |
| 2,2'-(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane | not readily biodegradable. | aerobic | 5 % | 28 d | OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test) |
| Bisphenol-F epichlorhydrin resin; MW<700 | not readily biodegradable. | aerobic | 0 % | 28 d | OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test) |

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12.3. Bioaccumulative potential

No data available.

12.4. Mobility in soil

| Hazardous substances | LogPow | Temperature | Method |
|---|-----------|-------------|--|
| Pentaerythritol-PO-mercaptoglycerol | 1.2 | 20 °C | OECD Guideline 107 (Partition Coefficient (n-octanol / water), Shake Flask Method) |
| Talc | -9.4 | 25 °C | QSAR (Quantitative Structure Activity Relationship) |
| 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane | 3.242 | 25 °C | EU Method A.8 (Partition Coefficient) |
| Bisphenol-F epichlorhydrin resin; MW<700 | 2.7 - 3.6 | | OECD Guideline 117 (Partition Coefficient (n-octanol / water), HPLC Method) |

12.5. Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or vPvB.

12.6. Other adverse effects

No data available.

13. Disposal considerations**Recommended method of disposal:**

Dispose of waste and residues in accordance with local authority requirements.

Waste disposal of packaging not cleansed:

Use packages for recycling only when totally empty.

14. Transport informationMarine transport IMDG:
Not dangerous goodsAir transport IATA:
Not dangerous goods**Local transport information**

Land transportation: If it falls under the Fire Service Act, the Industrial Safety and Health Act, the Poisonous and Deleterious Substances Act, etc., follow the prescribed transportation method.

Maritime transportation: Follow the transportation law stipulated in the Ship Safety Act.

Air transportation: Follow the transportation method stipulated in the Civil Aeronautics Act.

15. Regulatory information

Industrial Safety and Health Law:

| | |
|---|---|
| SDS Required Substances | Titanium dioxide < 1% particles with diameter ≤ 10 μm |
| Label Required Substances | Titanium dioxide < 1% particles with diameter ≤ 10 μm |
| Class 1 Designated Chemical Substances (ISHL Enforcement Order, Table 3, as amended) | not applicable |
| Class 2 Designated Chemical Substances (ISHL Enforcement Order, Table 3, as amended) | not applicable |
| Class 3 Designated Chemical Substances (ISHL Enforcement Order, Table 3, as amended) | not applicable |
| Specified Chemical Substances (ISHL Ordinance No. 39, Article 38-3) | not applicable |
| Class 1 Organic Solvents: | not applicable |
| Class 2 Organic Solvents: | not applicable |
| Class 3 Organic Solvents: | not applicable |
| Mutagens, Existing Chemicals: | 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, number average molecular weight ≤ 700 |
| Mutagens, New Chemicals: | not applicable |
| Carcinogens from SDS and Risk Assessment List | not applicable |

Fire services law: Does not apply.

Poisonous and Deleterious substances control Law: Does not apply.

**Law concerning Pollutant Release and Transfer Register / PRTR:(content value is typical value)
(If unit is %O: %O=1/10%)** Does not apply.

16. Other information

Issue date: 19.05.2025

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