

**ARALDITE® 2053-15 A**

Version 1.0      Revision Date: 06/03/2021      SDS Number: 400000011046      Date of last issue: -  
 Date of first issue: 06/03/2021

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**SECTION 1. IDENTIFICATION**

Product name : ARALDITE® 2053-15 A

**Manufacturer or supplier's details**

Company name of supplier : Huntsman Advanced Materials Americas LLC  
 Address : P.O. Box 4980  
 The Woodlands,  
 TX 77387  
 United States of America (USA)  
 Telephone : Non-Emergency: (800) 257-5547  
 E-mail address of person responsible for the SDS : Global\_Product\_EHS\_AdMat@huntsman.com  
 Emergency telephone number : Chemtrec: (800) 424-9300 or (703) 527-3887

**Recommended use of the chemical and restrictions on use**

Recommended use : Resin

**SECTION 2. HAZARDS IDENTIFICATION****GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)**

Flammable liquids : Category 2  
 Skin irritation : Category 2  
 Serious eye damage : Category 1  
 Skin sensitisation : Category 1  
 Specific target organ toxicity - single exposure : Category 3 (Respiratory system)  
 Short-term (acute) aquatic hazard : Category 3  
 Chronic aquatic toxicity : Category 3



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**GHS label elements**

Hazard pictograms :   

Signal word : Danger

Hazard statements : H225 Highly flammable liquid and vapour.

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H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H318 Causes serious eye damage.  
H335 May cause respiratory irritation.  
H412 Harmful to aquatic life with long lasting effects.

## Precautionary statements

: **Prevention:**

P210 Keep away from heat/ sparks/ open flames/ hot surfaces.  
No smoking.  
P233 Keep container tightly closed.  
P240 Ground/bond container and receiving equipment.  
P241 Use explosion-proof electrical/ ventilating/ lighting equipment.  
P242 Use only non-sparking tools.  
P243 Take precautionary measures against static discharge.  
P261 Avoid breathing mist or vapours.  
P264 Wash skin thoroughly after handling.  
P271 Use only outdoors or in a well-ventilated area.  
P272 Contaminated work clothing must not be allowed out of the workplace.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ eye protection/ face protection.

**Response:**

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.  
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.  
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  
P362 Take off contaminated clothing and wash 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.  
P403 + P235 Store in a well-ventilated place. Keep cool.  
P405 Store locked up.

**Disposal:**

P501 Dispose of contents/container to an approved facility in accordance with local, regional, national and international regulations.

**Other hazards**

None known.

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

Substance / Mixture : Mixture

**Hazardous components**

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Chemical name	CAS-No.	Concentration (% w/w)
methyl methacrylate	80-62-6	50 - 70
silica, amorphous, fumed, crystalline free	7631-86-9	5 - 10
methacrylic acid	79-41-4	5 - 10
octadecyl methacrylate	32360-05-7	1 - 5
hexadecyl methacrylate	2495-27-4	1 - 5
calcium carbonate	471-34-1	1 - 5
zinc oxide	1314-13-2	1 - 5
Talc (Mg <sub>3</sub> H <sub>2</sub> (SiO <sub>3</sub> ) <sub>4</sub> )	14807-96-6	0.1 - 1
2,2'-[(4-methylphenyl)imino]bisethanol	3077-12-1	0.1 - 1

The specific chemical identity and/or exact percentage (concentration) of composition may be withheld as a trade secret.

**SECTION 4. FIRST AID MEASURES**

- General advice : Move out of dangerous area.  
 Consult a physician.  
 Show this safety data sheet to the doctor in attendance.  
 Treat symptomatically.  
 Get medical attention if symptoms occur.
- If inhaled : If inhaled, remove to fresh air.  
 Get medical attention if symptoms occur.
- In case of skin contact : Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.  
 If on skin, rinse well with water.  
 If on clothes, remove clothes.
- 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 eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.  
 Do NOT induce vomiting.  
 Never give anything by mouth to an unconscious person.  
 If symptoms persist, call a physician.  
 Take victim immediately to hospital.
- Most important symptoms and effects, both acute and delayed : None known.

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- Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing. If potential for exposure exists refer to Section 8 for specific personal protective equipment. Avoid inhalation, ingestion and contact with skin and eyes. No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
- Notes to physician : Treat symptomatically.

**SECTION 5. FIREFIGHTING MEASURES**

- Suitable extinguishing media : Water spray  
Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical
- Unsuitable extinguishing media : Exercise caution when using a high volume water jet as it may scatter and spread fire
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Carbon oxides
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.  
Ensure adequate ventilation.  
Remove all sources of ignition.  
Evacuate personnel to safe areas.  
Refer to protective measures listed in sections 7 and 8.  
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

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- Environmental precautions : Prevent product from entering drains.  
Prevent further leakage or spillage if safe to do so.  
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Neutralize with chalk, alkali solution or ammonia.  
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

**SECTION 7. HANDLING AND STORAGE**

- Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material.  
Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours).  
Use only explosion-proof equipment.  
Keep away from open flames, hot surfaces and sources of ignition.
- Advice on safe handling : Use only with adequate ventilation/personal protection.  
Provide sufficient air exchange and/or exhaust in work rooms.  
For personal protection see section 8.  
Keep container closed when not in use.  
Avoid formation of aerosol.  
Do not breathe vapours or spray mist.  
Avoid exposure - obtain special instructions before use.  
Avoid contact with skin and eyes.  
Smoking, eating and drinking should be prohibited in the application area.  
Persons susceptible to 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.
- Conditions for safe storage : No smoking.  
Keep container tightly closed in a dry and well-ventilated place.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
Observe label precautions.  
Keep in properly labelled containers.
- Materials to avoid : Keep away from strong bases.
- Recommended storage temperature : 36 - 46 °F / 2 - 8 °C
- Further information on storage stability : Stable under normal conditions.

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**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Components with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
methyl methacrylate	80-62-6	TWA	50 ppm	ACGIH
		STEL	100 ppm	ACGIH
		TWA	100 ppm 410 mg/m3	OSHA Z-1
		TWA	100 ppm 410 mg/m3	NIOSH REL
silica, amorphous, fumed, crystalline free	7631-86-9	TWA	100 ppm 410 mg/m3	OSHA P0
		TWA (Dust)	20 Million particles per cubic foot (Silica)	OSHA Z-3
		TWA (Dust)	80 mg/m3 / %SiO2 (Silica)	OSHA Z-3
methacrylic acid	79-41-4	TWA	6 mg/m3 (Silica)	NIOSH REL
		TWA	20 ppm	ACGIH
		TWA	20 ppm 70 mg/m3	NIOSH REL
zinc oxide	1314-13-2	TWA	20 ppm 70 mg/m3	OSHA P0
		TWA (Respirable particulate matter)	2 mg/m3	ACGIH
		STEL (Respirable particulate matter)	10 mg/m3	ACGIH
		TWA (Fumes)	5 mg/m3	OSHA Z-1
		TWA (total dust)	15 mg/m3	OSHA Z-1
		TWA (respirable fraction)	5 mg/m3	OSHA Z-1
		TWA (Dust)	5 mg/m3	NIOSH REL
		TWA (Fumes)	5 mg/m3	NIOSH REL
		ST (Fumes)	10 mg/m3	NIOSH REL
		C (Dust)	15 mg/m3	NIOSH REL
		TWA (Total dust)	10 mg/m3	OSHA P0
		TWA (respirable dust fraction)	5 mg/m3	OSHA P0

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		TWA (Fumes)	5 mg/m3	OSHA P0
		STEL (Fumes)	10 mg/m3	OSHA P0
calcium carbonate	471-34-1	TWA (Respirable)	5 mg/m3 (Calcium carbonate)	NIOSH REL
		TWA (total)	10 mg/m3 (Calcium carbonate)	NIOSH REL
Talc (Mg3H2(SiO3)4)	14807-96-6	TWA (Dust)	20 Million particles per cubic foot	OSHA Z-3
		TWA (Respirable)	2 mg/m3	NIOSH REL
		TWA	0.1 fibres per cubic centimeter	ACGIH
		TWA (Respirable particulate matter)	2 mg/m3	ACGIH
		TWA (respirable dust fraction)	2 mg/m3	OSHA P0

**Personal protective equipment**

Respiratory protection : Ensure adequate ventilation.  
Suitable respiratory equipment:  
Respirator with a half face mask  
Recommended Filter type:  
Combined particulates and organic vapour type  
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.

Filter type : Filter type A-P2 (organic vapours, particles)

**Hand protection**

Material : butyl-rubber  
Material : Ethyl Vinyl Alcohol Laminate (EVAL)  
Break through time : > 8 h

Material : Nitrile rubber  
Break through time : 10 - 480 min

Remarks : 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.  
The suitability for a specific workplace should be discussed with the producers of the protective gloves.  
Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).

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Eye protection : Eye wash bottle with pure water  
Tightly fitting safety goggles  
Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : Impervious clothing  
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures : When using do not eat or drink.  
When using do not smoke.  
Wash hands before breaks and at the end of workday.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance : paste

Colour : beige

Odour : acrylic-like

Odour Threshold : No data is available on the product itself.

pH : 4  
Concentration: 500 g/l

Melting point/freezing point : No data is available on the product itself.

Boiling point : No data is available on the product itself.

Flash point : 50 °F / 10 °C

Evaporation rate : No data is available on the product itself.

Flammability (solid, gas) : No data is available on the product itself.

Flammability (liquids) : No data is available on the product itself.

Upper explosion limit / Upper flammability limit : No data is available on the product itself.

Lower explosion limit / Lower flammability limit : No data is available on the product itself.

Vapour pressure : No data is available on the product itself.

Relative vapour density : No data is available on the product itself.

Relative density : No data is available on the product itself.

Density : 1.04 g/cm<sup>3</sup> (77 °F / 25 °C)

Solubility(ies)  
Water solubility : insoluble, immiscible



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Solubility in other solvents : No data is available on the product itself.

Partition coefficient: n-octanol/water : No data is available on the product itself.

Auto-ignition temperature : No data is available on the product itself.

Thermal decomposition : No data is available on the product itself.

Self-Accelerating decomposition temperature (SADT) : No data is available on the product itself.

Viscosity  
Viscosity, dynamic : 59,000 mPa.s (77 °F / 25 °C)

Explosive properties : No data is available on the product itself.

Oxidizing properties : No data is available on the product itself.

Particle size : No data is available on the product itself.

**SECTION 10. STABILITY AND REACTIVITY**

Reactivity : No dangerous reaction known under conditions of normal use.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : Vapours may form explosive mixture with air.

Conditions to avoid : Heat, flames and sparks.

Incompatible materials : None known.

Hazardous decomposition products : carbon dioxide  
carbon monoxide

**SECTION 11. TOXICOLOGICAL INFORMATION**

Information on likely routes of exposure : No data is available on the product itself.

**Acute toxicity**

Acute oral toxicity - Product : Acute toxicity estimate : > 5,000 mg/kg  
Method: Calculation method

Acute inhalation toxicity - Product : Acute toxicity estimate: 44.08 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour

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Method: Calculation method

Acute dermal toxicity - Product : Acute toxicity estimate : > 5,000 mg/kg  
Method: Calculation method

Acute toxicity (other routes of administration) : No data available

**Skin corrosion/irritation****Components:**

methyl methacrylate:

Species: Rabbit

Method: OPPTS 870.2500

Result: Skin irritation

silica, amorphous, fumed, crystalline free:

Species: Rabbit

Assessment: No skin irritation

Method: OECD Test Guideline 404

Result: No skin irritation

methacrylic acid:

Species: Rabbit

Assessment: Causes severe burns.

Method: OECD Test Guideline 404

Result: Extremely corrosive and destructive to tissue.

GLP: yes

octadecyl methacrylate:

Result: Skin irritation

hexadecyl methacrylate:

Result: Skin irritation

calcium carbonate:

Species: Rabbit

Assessment: No skin irritation

Method: OECD Test Guideline 404

Result: No skin irritation

zinc oxide:

Species: Rabbit

Assessment: No skin irritation

Method: OECD Test Guideline 404

Result: No skin irritation

2,2'-[(4-methylphenyl)imino]bisethanol:

Species: Rabbit

Assessment: No skin irritation

Method: Other guidelines

Result: No skin irritation

GLP: no

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**Serious eye damage/eye irritation****Components:**

silica, amorphous, fumed, crystalline free:

Species: Rabbit

Result: No eye irritation

Assessment: No eye irritation

Method: OECD Test Guideline 405

methacrylic acid:

Species: Rabbit

Result: Irreversible effects on the eye

Assessment: Risk of serious damage to eyes.

Method: Draize Test

GLP: no

octadecyl methacrylate:

Result: Eye irritation

hexadecyl methacrylate:

Result: Eye irritation

calcium carbonate:

Species: Rabbit

Result: No eye irritation

Assessment: No eye irritation

Method: OECD Test Guideline 405

zinc oxide:

Species: Rabbit

Result: No eye irritation

Assessment: No eye irritation

Method: OECD Test Guideline 405

2,2'-[(4-methylphenyl)imino]bisethanol:

Species: Rabbit

Result: Risk of serious damage to eyes.

Assessment: Risk of serious damage to eyes.

Method: OECD Test Guideline 405

GLP: no

**Respiratory or skin sensitisation****Components:**

methyl methacrylate:

Exposure routes: Skin

Species: Mouse

Assessment: May cause sensitisation by skin contact.

Method: OECD Test Guideline 429

Result: May cause sensitisation by skin contact.

methacrylic acid:

Test Type: Buehler Test

Exposure routes: Skin

Species: Guinea pig

Assessment: Did not cause sensitisation on laboratory animals.

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Method: OECD Test Guideline 406  
Result: Did not cause sensitisation on laboratory animals.

octadecyl methacrylate:  
Exposure routes: Skin  
Species: Mouse  
Method: OECD Test Guideline 429  
Result: Does not cause skin sensitisation.

hexadecyl methacrylate:  
Exposure routes: Skin  
Species: Mouse  
Method: OECD Test Guideline 429  
Result: Does not cause skin sensitisation.

zinc oxide:  
Exposure routes: Skin  
Species: Guinea pig  
Method: OECD Test Guideline 406  
Result: Does not cause skin sensitisation.

2,2'-[(4-methylphenyl)imino]bisethanol:  
Test Type: Local lymph node assay (LLNA)  
Species: Mouse  
Assessment: May cause sensitisation by skin contact.  
Method: OECD Test Guideline 429  
Result: May cause sensitisation by skin contact.  
GLP: yes  
Remarks: Information given is based on data obtained from similar substances.

Assessment: No data available

**Germ cell mutagenicity****Components:**

methyl methacrylate:  
Genotoxicity in vitro : Test Type: Microbial mutagenesis assay (Ames test)  
Test system: Salmonella typhimurium  
Method: OECD Test Guideline 471  
Result: negative

silica, amorphous, fumed, crystalline free:  
Genotoxicity in vitro : Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 473  
Result: negative

Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative

Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative

methacrylic acid:  
Genotoxicity in vitro : Test Type: reverse mutation assay

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Test system: Salmonella typhimurium  
 Metabolic activation: with and without metabolic activation  
 Method: OECD Test Guideline 471  
 Result: negative

octadecyl methacrylate:  
 Genotoxicity in vitro

: Concentration: .1 - 1200 µg/L  
 Metabolic activation: with and without metabolic activation  
 Method: OECD Test Guideline 476  
 Result: negative

Concentration: 33 - 5000 ug/plate  
 Metabolic activation: with and without metabolic activation  
 Method: OECD Test Guideline 471  
 Result: negative

Concentration: 14.5 - 2233 µg/L  
 Metabolic activation: with and without metabolic activation  
 Method: OECD Test Guideline 473  
 Result: negative

hexadecyl methacrylate:  
 Genotoxicity in vitro

: Concentration: .1 - 1200 µg/L  
 Metabolic activation: with and without metabolic activation  
 Method: OECD Test Guideline 476  
 Result: negative

Concentration: 33 - 5000 ug/plate  
 Metabolic activation: with and without metabolic activation  
 Method: OECD Test Guideline 471  
 Result: negative

Concentration: 14.5 - 2233 µg/L  
 Metabolic activation: with and without metabolic activation  
 Method: OECD Test Guideline 473  
 Result: negative

calcium carbonate:  
 Genotoxicity in vitro

: Metabolic activation: with and without metabolic activation  
 Method: OECD Test Guideline 471  
 Result: negative

Concentration: 0 - 250 µg/L  
 Metabolic activation: with and without metabolic activation  
 Method: OECD Test Guideline 476  
 Result: negative

zinc oxide:  
 Genotoxicity in vitro

: Test Type: reverse mutation assay  
 Test system: Salmonella typhimurium and E. coli  
 Metabolic activation: with and without metabolic activation  
 Method: OECD Test Guideline 471  
 Result: negative

Test Type: Chromosome aberration test in vitro  
 Test system: Chinese hamster lung cells

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Metabolic activation: with and without metabolic activation  
 Method: OECD Test Guideline 473  
 GLP: yes

Test Type: Micronucleus test  
 Metabolic activation: without metabolic activation  
 Method: OECD Test Guideline 487  
 Result: negative

**2,2'-(4-methylphenyl)imino]bisethanol:**

Genotoxicity in vitro : Test Type: reverse mutation assay  
 Test system: Salmonella typhimurium  
 Metabolic activation: with and without metabolic activation  
 Method: OECD Test Guideline 471  
 Result: negative  
 GLP: no

Test Type: Chromosome aberration test in vitro  
 Test system: Human lymphocytes  
 Metabolic activation: with and without metabolic activation  
 Method: OECD Test Guideline 473  
 Result: negative  
 GLP: yes  
 Remarks: Information given is based on data obtained from similar substances.

Test Type: In vitro mammalian cell gene mutation test  
 Test system: mouse lymphoma cells  
 Metabolic activation: with and without metabolic activation  
 Method: OECD Test Guideline 476  
 Result: negative  
 GLP: yes  
 Remarks: Information given is based on data obtained from similar substances.

**Components:**

silica, amorphous, fumed, crystalline free:

Genotoxicity in vivo : Application Route: Inhalation  
 Dose: 50 mg/m<sup>3</sup>  
 Result: negative

methacrylic acid:

Genotoxicity in vivo : Test Type: in vivo assay  
 Species: Rat (male)  
 Cell type: Somatic  
 Application Route: Inhalation  
 Exposure time: 2 h  
 Dose: 0.4, 1.6, 2.8 and 4 mg/L  
 Method: OECD Test Guideline 475  
 Result: Not classified due to inconclusive data.  
 GLP: no

Test Type: dominant lethal test  
 Species: Mouse (male)  
 Application Route: Inhalation  
 Exposure time: 6 h

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Dose: 0.405, 4.05 and 36.45 mg/L  
 Method: OECD Test Guideline 478  
 Result: negative  
 GLP: no

octadecyl methacrylate:  
 Genotoxicity in vivo

: Application Route: Oral  
 Exposure time: 72 h  
 Dose: 5000 mg/kg  
 Method: OECD Test Guideline 474  
 Result: negative

hexadecyl methacrylate:  
 Genotoxicity in vivo

: Application Route: Oral  
 Exposure time: 72 h  
 Dose: 5000 mg/kg  
 Method: OECD Test Guideline 474  
 Result: negative

zinc oxide:  
 Genotoxicity in vivo

: Test Type: Micronucleus test  
 Species: Mouse (male)  
 Cell type: Bone marrow  
 Application Route: Intraperitoneal injection  
 Dose: 15, 30 and 60 mg/kg bw  
 Method: OECD Test Guideline 474  
 Result: negative

Germ cell mutagenicity-  
 Assessment

: No data available

**Carcinogenicity****Components:**

methyl methacrylate:  
 Species: Rat, male and female  
 Application Route: Oral  
 Exposure time: 2 Years  
 Dose: 6, 60, 2000 ppm  
 Frequency of Treatment: once daily  
 NOAEL: 90.3 mg/kg bw/day

Result: negative

silica, amorphous, fumed, crystalline free:

Species: Rat, male and female  
 Application Route: Oral  
 Exposure time: 103 weeks  
 Dose: 1800 - 3200 mg/kg  
 Frequency of Treatment: 7 daily  
 Method: OECD Test Guideline 453  
 Result: negative

methacrylic acid:

Species: Rat, male and female  
 Application Route: inhalation (vapour)



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Exposure time: 102 weeks  
 Frequency of Treatment: 5 days/week  
 NOAEL: >= 2.05 mg/kg body weight

Method: OECD Test Guideline 451

Species: Mouse, male and female  
 Application Route: inhalation (vapour)  
 Exposure time: 102 weeks  
 Dose: ca. 2.05 and 4.1 mg/L  
 Frequency of Treatment: 5 days/week  
 LOAEL: ca. 2.05 mg/l

Method: OECD Test Guideline 451

zinc oxide:  
 Species: Mouse, male and female  
 Application Route: Oral  
 Exposure time: 1 year  
 Dose: 1000 and 5000 ppm Zinc  
 Frequency of Treatment: daily  
 NOAEL: > 22,000 mg/kg body weight

Remarks: Information given is based on data obtained from similar substances.

Carcinogenicity - Assessment : No data available

**IARC** Group 1: Carcinogenic to humans  
 Talc (Mg<sub>3</sub>H<sub>2</sub>(SiO<sub>3</sub>)<sub>4</sub>)

**ACGIH** Confirmed human carcinogen  
 Talc (Mg<sub>3</sub>H<sub>2</sub>(SiO<sub>3</sub>)<sub>4</sub>)

**OSHA** No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**NTP** Known to be human carcinogen  
 Talc (Mg<sub>3</sub>H<sub>2</sub>(SiO<sub>3</sub>)<sub>4</sub>)  
 (Silica, Crystalline (Respirable Size))

**Reproductive toxicity****Components:**

methacrylic acid:  
 Effects on fertility : Test Type: Two-generation study  
 Species: Rat, male and female  
 Application Route: Oral  
 Dose: 0, 50, 150, 450 mg/kg/day  
 General Toxicity - Parent: No observed adverse effect level:  
 50 mg/kg body weight  
 Fertility: No observed adverse effect level F1: 400 mg/kg body weight  
 Symptoms: Reduced body weight  
 Method: OECD Test Guideline 416



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GLP: yes

octadecyl methacrylate:

Species: Rat, male and female  
 Application Route: Oral  
 Dose: >= 1000 milligram per kilogram  
 Frequency of Treatment: 7 days/week  
 Method: OECD Test Guideline 422  
 Result: negative

Species: Rat, male and female  
 Application Route: Oral  
 Dose: 400 milligram per kilogram  
 Frequency of Treatment: 7 days/week  
 Method: OECD Test Guideline 416  
 Result: negative

hexadecyl methacrylate:

Species: Rat, male and female  
 Application Route: Oral  
 Dose: >=1000 milligram per kilogram  
 Frequency of Treatment: 7 days/week  
 Method: OECD Test Guideline 422  
 Result: negative

Species: Rat, male and female  
 Application Route: Oral  
 Frequency of Treatment: 7 days/week  
 Method: OECD Test Guideline 416  
 Result: negative

zinc oxide:

Test Type: Two-generation study  
 Species: Rat, male and female  
 Application Route: Oral  
 Dose: 7.5/15/30 mg/kg bw/day  
 General Toxicity - Parent: Lowest observed adverse effect level: 7.5 mg/kg body weight  
 General Toxicity F1: No observed adverse effect level: 15 mg/kg body weight  
 Method: OECD Test Guideline 416  
 Remarks: Information given is based on data obtained from similar substances.

**Components:**

methyl methacrylate:  
 Effects on foetal  
 development

: Species: Rat  
 Application Route: Inhalation  
 Dose: 99, 304, 1178 ppm  
 Teratogenicity: No observed adverse effect concentration F1: 8,300 mg/m<sup>3</sup>  
 Embryo-foetal toxicity: No observed adverse effect concentration F1: 8,300 mg/m<sup>3</sup>  
 Method: OECD Test Guideline 414  
 Result: No teratogenic effects

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silica, amorphous, fumed, crystalline free:

Species: Mouse  
Application Route: Oral  
General Toxicity Maternal: No observed adverse effect level:  
1,340 mg/kg body weight  
Method: OECD Test Guideline 414  
Result: No teratogenic effects

Species: Rabbit  
Application Route: Oral  
General Toxicity Maternal: No observed adverse effect level:  
1,600 mg/kg body weight  
Method: OECD Test Guideline 414  
Result: No teratogenic effects

Species: Rat  
Application Route: Oral  
General Toxicity Maternal: No observed adverse effect level:  
1,350 mg/kg body weight  
Method: OECD Test Guideline 414  
Result: No teratogenic effects

methacrylic acid:

Test Type: Pre-natal  
Species: Rat, female  
Application Route: Inhalation  
Dose: 0, 50, 100, 200 or 300 ppm  
Duration of Single Treatment: 14 d  
Frequency of Treatment: 7 days/week  
General Toxicity Maternal: No observed adverse effect level:  
200 ppm  
Developmental Toxicity: No observed adverse effect level: >=  
300 ppm  
Embryo-foetal toxicity: No observed adverse effect  
concentration F1: 300 ppm  
Method: OECD Test Guideline 414  
Result: No effects on fertility and early embryonic  
development were detected.

Test Type: Pre-natal  
Species: Rabbit, male and female  
Application Route: Oral  
Dose: 50, 150, 450 milligram per kilogram  
Duration of Single Treatment: 23 d  
Frequency of Treatment: 7 days/week  
General Toxicity Maternal: No observed adverse effect level:  
50 mg/kg body weight  
Developmental Toxicity: No observed adverse effect level F1:  
450 mg/kg body weight  
Result: No effects on fertility and early embryonic  
development were detected.

octadecyl methacrylate:

Species: Rat, male and female  
Application Route: Oral  
General Toxicity Maternal: No observed adverse effect level:

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1,000 mg/kg body weight  
Method: OECD Test Guideline 422  
Result: No teratogenic effects

Species: Rat, female  
Application Route: Inhalation  
General Toxicity Maternal: No observed adverse effect level:  
100 ppm  
Method: OECD Test Guideline 414  
Result: No teratogenic effects

hexadecyl methacrylate:

Species: Rat, male and female  
Application Route: Oral  
General Toxicity Maternal: No observed adverse effect level:  
1,000 mg/kg body weight  
Method: OECD Test Guideline 422  
Result: No teratogenic effects

Species: Rat, female  
Application Route: Inhalation  
General Toxicity Maternal: No observed adverse effect level:  
100 ppm  
Method: OECD Test Guideline 414  
Result: No teratogenic effects

zinc oxide:

Test Type: Pre-natal  
Species: Rat  
Application Route: inhalation (dust/mist/fume)  
Dose: 0.3/1.5/7.5 mg/m<sup>3</sup>  
Duration of Single Treatment: 6 h  
General Toxicity Maternal: No observed adverse effect  
concentration: 1.5 mg/m<sup>3</sup>  
Developmental Toxicity: No observed adverse effect  
concentration: 7.5 mg/m<sup>3</sup>  
Method: OECD Test Guideline 414  
Result: No teratogenic effects

2,2'-[(4-methylphenyl)imino]bisethanol:

Test Type: Pre-natal  
Species: Rat, females  
Application Route: Oral  
Dose: 60/200/600 milligram per kilogram  
Duration of Single Treatment: 15 d  
General Toxicity Maternal: No observed adverse effect level:  
200 mg/kg body weight  
Developmental Toxicity: No observed adverse effect level: >=  
600 mg/kg body weight  
Method: OECD Test Guideline 414  
GLP: yes  
Remarks: Information given is based on data obtained from  
similar substances.

Reproductive toxicity - Assessment : No data available

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**STOT - single exposure****Components:**

methyl methacrylate:

Exposure routes: Inhalation

Target Organs: Respiratory Tract

Assessment: May cause respiratory irritation.

methacrylic acid:

Exposure routes: Inhalation

Target Organs: Respiratory Tract

Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

octadecyl methacrylate:

Exposure routes: Inhalation

Target Organs: Respiratory Tract

Assessment: May cause respiratory irritation.

hexadecyl methacrylate:

Exposure routes: Inhalation

Target Organs: Respiratory Tract

Assessment: May cause respiratory irritation.

**STOT - repeated exposure**

No data available

**Repeated dose toxicity****Components:**

methyl methacrylate:

Species: Rat, male and female

NOAEL: 124.1 mg/kg

Application Route: oral (drinking water)

Exposure time: 2 years

Number of exposures: daily

Dose: 6, 60, 2000 ppm

silica, amorphous, fumed, crystalline free:

Species: Rat, male and female

NOAEL: 7950 - 8980 mg/kg

Application Route: Ingestion

Exposure time: 4,320 h

Number of exposures: 7 d

Method: Subchronic toxicity

Species: Rat, male and female

NOEC: 4000 - 4500 mg/m3

Application Route: Ingestion

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Test atmosphere: dust/mist  
Exposure time: 13 Weeks  
Number of exposures: 7 d  
Method: OECD Test Guideline 413

methacrylic acid:  
Species: Rat, male and female  
NOEC: 352 - 1232 mg/m<sup>3</sup>  
Application Route: inhalation (vapour)  
Test atmosphere: vapour  
Exposure time: 90 d  
Number of exposures: 6 h  
Dose: 70/352/1232 mg/m<sup>3</sup>  
Subsequent observation period: 5 days/week  
Method: OECD Test Guideline 413  
GLP: yes

octadecyl methacrylate:  
Species: Rat, male and female  
NOAEL: 1000 mg/kg  
Application Route: Ingestion  
Number of exposures: 7 d  
Method: Subchronic toxicity

Species: Rat, male and female  
NOAEL: 120 mg/kg  
Application Route: Ingestion  
Exposure time: 2,160 h  
Number of exposures: 7 d  
Method: Subchronic toxicity

hexadecyl methacrylate:  
Species: Rat, male and female  
NOAEL: 1000 mg/kg  
Application Route: Ingestion  
Number of exposures: 7 d  
Method: Subchronic toxicity

Species: Rat, male and female  
NOAEL: 120 mg/kg  
Application Route: Ingestion  
Exposure time: 2,160 h  
Number of exposures: 7 d  
Method: Subchronic toxicity

zinc oxide:  
Species: Mouse, male and female  
NOEL: 3000 ppm  
Application Route: Ingestion  
Exposure time: 13 Weeks  
Number of exposures: 7 d  
Method: Subchronic toxicity

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Remarks: Information given is based on data obtained from similar substances.

Species: Rat, male  
Application Route: inhalation (dust/mist/fume)  
Exposure time: 13 weeks 6 h  
Number of exposures: 5 days/week  
Dose: 0.3, 1.5 and 4.5 mg/m<sup>3</sup>  
Method: OECD Test Guideline 413  
GLP: yes

Species: Rat, male and female  
LOAEL: 75 mg/kg  
Application Route: Dermal  
Exposure time: 28 days 6 h  
Number of exposures: 5 days/week  
Dose: 0, 75, 180, and 360 mg/kg bw/d

2,2'-[(4-methylphenyl)imino]bisethanol:

Species: Rat, male and female  
NOAEL: 100 mg/kg  
Application Route: Oral  
Exposure time: 28 d  
Number of exposures: daily  
Dose: 100/300/600/1000 mg/kg bw/day  
Method: OECD Test Guideline 407  
GLP: yes

Remarks: Information given is based on data obtained from similar substances.

Repeated dose toxicity - : No data available  
Assessment**Aspiration toxicity**

No data available

**Experience with human exposure**

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

**Toxicology, Metabolism, Distribution**

No data available

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**Neurological effects**

No data available

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

Remarks: Solvents may degrease the skin.

**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Components:**

methyl methacrylate:

Toxicity to fish : LC50: 191 mg/l  
Exposure time: 96 hLC50 (Oncorhynchus mykiss (rainbow trout)): > 79 mg/l  
Exposure time: 96 h  
Test Type: flow-through test  
Method: Fish Early-life Stage Toxicity Test

silica, amorphous, fumed, crystalline free:

Toxicity to fish : LL50 (Brachydanio rerio (zebrafish)): > 10,000 mg/l  
Exposure time: 96 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 202

methacrylic acid:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 85 mg/l  
End point: mortality  
Exposure time: 96 h  
Test Type: flow-through test  
Test substance: Fresh water  
Method: Fish Acute Toxicity Test  
GLP: yes  
Remarks: Toxic to aquatic organisms.

calcium carbonate:

Toxicity to fish : LC50: > 56,000 mg/l  
Exposure time: 96 hTalc (Mg<sub>3</sub>H<sub>2</sub>(SiO<sub>3</sub>)<sub>4</sub>):Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): > 100 mg/l  
Exposure time: 24 h

2,2'-[(4-methylphenyl)imino]bisethanol:

Toxicity to fish : LC50 (Cyprinus carpio (Carp)): > 100 mg/l  
End point: mortality  
Exposure time: 96 h  
Test Type: static test  
Analytical monitoring: yes

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Test substance: Fresh water  
Method: OECD Test Guideline 203  
GLP: yes  
Remarks: Based on data from similar materials

**Components:**

methyl methacrylate:

Toxicity to daphnia and other aquatic invertebrates : EC50: 69 mg/l  
Exposure time: 48 h

silica, amorphous, fumed, crystalline free:

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): >= 1,000 mg/l  
Exposure time: 24 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 202

methacrylic acid:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 130 mg/l  
End point: Immobilization  
Exposure time: 48 h  
Test Type: flow-through test  
Analytical monitoring: yes  
Test substance: Fresh water  
Method: Aquatic Invertebrate Acute Toxicity Test, Freshwater Daphnids  
GLP: yes

2,2'-[(4-methylphenyl)imino]bisethanol:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 48 mg/l  
End point: Immobilization  
Exposure time: 48 h  
Test Type: static test  
Analytical monitoring: yes  
Test substance: Fresh water  
Method: OECD Test Guideline 202  
GLP: yes  
Remarks: Information given is based on data obtained from similar substances.

**Components:**

methyl methacrylate:

Toxicity to algae/aquatic plants : EC50: > 110 mg/l  
Exposure time: 72 h

silica, amorphous, fumed, crystalline free:

Toxicity to algae/aquatic plants : EL50 (Desmodesmus subspicatus (green algae)): > 10,000 mg/l  
Exposure time: 72 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 201

methacrylic acid:

Toxicity to algae/aquatic plants : ErC50 (Selenastrum capricornutum (green algae)): 45 mg/l



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plants

Exposure time: 72 h  
 Test Type: static test  
 Analytical monitoring: yes  
 Test substance: Fresh water  
 Method: OECD Test Guideline 201  
 GLP: yes

NOEC (Selenastrum capricornutum (green algae)): 8.2 mg/l  
 Exposure time: 72 h  
 Test Type: static test  
 Analytical monitoring: yes  
 Test substance: Fresh water  
 Method: OECD Test Guideline 201  
 GLP: yes

2,2'-[(4-methylphenyl)imino]bisethanol:

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l

Exposure time: 72 h  
 Test Type: static test  
 Analytical monitoring: yes  
 Test substance: Fresh water  
 Method: OECD Test Guideline 201  
 GLP: yes

Remarks: Based on data from similar materials

NOEC (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l

Exposure time: 72 h  
 Test Type: static test  
 Analytical monitoring: yes  
 Test substance: Fresh water  
 Method: OECD Test Guideline 201  
 GLP: yes

Remarks: Based on data from similar materials

**Components:**

zinc oxide:

M-Factor (Acute aquatic toxicity) : 1

**Components:**

methacrylic acid:

Toxicity to fish (Chronic toxicity) : NOEC (Brachydanio rerio (zebrafish)): 10 mg/l

Exposure time: 35 d  
 Test Type: flow-through test  
 Analytical monitoring: yes  
 Test substance: Fresh water  
 Method: OECD Test Guideline 210  
 GLP: yes

**Components:**

methyl methacrylate:

Toxicity to daphnia and other aquatic invertebrates : NOEC (Daphnia magna (Water flea)): 37 mg/l  
 Exposure time: 21 d

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(Chronic toxicity)      Test Type: flow-through test  
 Method: OECD Test Guideline 211

methacrylic acid:  
 Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 53 mg/l  
 Exposure time: 21 d  
 Test Type: flow-through test  
 Analytical monitoring: yes  
 Test substance: Fresh water  
 Method: OECD Test Guideline 211  
 GLP: yes

**Components:**

zinc oxide:  
 M-Factor (Chronic aquatic toxicity) : 1

**Components:**

methacrylic acid:  
 Toxicity to microorganisms : EC50 (Pseudomonas putida): 270 mg/l  
 Exposure time: 16.5 h  
 Test Type: static test  
 Analytical monitoring: no  
 Test substance: Fresh water  
 Method: DIN 38 412 Part 8  
 GLP: yes

2,2'-[(4-methylphenyl)imino]bisethanol:  
 Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l  
 Exposure time: 3 h  
 Test Type: static test  
 Analytical monitoring: no  
 Test substance: Fresh water  
 Method: OECD Test Guideline 209  
 GLP: yes  
 Remarks: Information given is based on data obtained from similar substances.

Toxicity to soil dwelling organisms : No data available

Plant toxicity : No data available

Sediment toxicity : No data available

Toxicity to terrestrial organisms : No data available

## Ecotoxicology Assessment

**Components:**

zinc oxide:  
 Acute aquatic toxicity : Very toxic to aquatic life.

**Components:**

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zinc oxide:  
Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

Toxicity Data on Soil : No data available

Other organisms relevant to the environment : No data available

**Persistence and degradability****Components:**

methyl methacrylate:  
Biodegradability : Result: Readily biodegradable.  
Biodegradation: > 60 %  
Exposure time: 28 d

methacrylic acid:  
Biodegradability : Test Type: aerobic  
Inoculum: activated sludge  
Concentration: 3 mg/l  
Result: Readily biodegradable.  
Biodegradation: 86 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301D  
GLP: yes

2,2'-[(4-methylphenyl)imino]bisethanol:  
Biodegradability : Test Type: aerobic  
Inoculum: activated sludge, non-adapted  
Concentration: 18 mg/l  
Result: Not biodegradable  
Biodegradation: 1.5 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301B  
GLP: yes  
Remarks: Based on data from similar materials

Biochemical Oxygen Demand (BOD) : No data available

Chemical Oxygen Demand (COD) : No data available

BOD/COD : No data available

ThOD : No data available

BOD/ThOD : No data available

Dissolved organic carbon (DOC) : No data available

Physico-chemical removability : No data available

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Stability in water : No data available

Photodegradation : No data available

Impact on Sewage Treatment : No data available

**Bioaccumulative potential****Components:**

methyl methacrylate:  
Bioaccumulation : Bioconcentration factor (BCF): 3

**Components:**

methyl methacrylate:  
Partition coefficient: n-octanol/water : log Pow: 1.38

methacrylic acid:  
Partition coefficient: n-octanol/water : log Pow: 0.93 (72 °F / 22 °C)  
pH: 2.2

hexadecyl methacrylate:  
Partition coefficient: n-octanol/water : log Pow: 8.64  
Method: QSAR  
GLP: no

2,2'-[(4-methylphenyl)imino]bisethanol:  
Partition coefficient: n-octanol/water : log Pow: 2 (95 °F / 35 °C)  
pH: 7  
Method: OECD Test Guideline 117

**Mobility in soil**

Mobility : No data available

Distribution among environmental compartments : No data available

Stability in soil : No data available

**Other adverse effects**

Environmental fate and pathways : No data available

Results of PBT and vPvB assessment : No data available

Endocrine disrupting potential : No data available

Adsorbed organic bound halogens (AOX) : No data available

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**Hazardous to the ozone layer**

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82  
Protection of Stratospheric Ozone - CAA Section 602 Class I  
Substances  
Remarks: This product neither contains, nor was  
manufactured with a Class I or Class II ODS as defined by the  
U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A +  
B).

Additional ecological information - Product : An environmental hazard cannot be excluded in the event of  
unprofessional handling or disposal.  
Harmful to aquatic life with long lasting effects.

Global warming potential (GWP) : No data available

**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**

Waste from residues : The product should not be allowed to enter drains, water  
courses or the soil.  
Do not contaminate ponds, waterways or ditches with  
chemical or used container.  
Send to a licensed waste management company.  
Dispose of as hazardous waste in compliance with local and  
national regulations.  
Dispose of contents/ container to an approved waste disposal  
plant.

Contaminated packaging : Empty remaining contents.  
Dispose of as unused product.  
Do not re-use empty containers.  
Do not burn, or use a cutting torch on, the empty drum.

**SECTION 14. TRANSPORT INFORMATION****International Regulations****IATA**

UN/ID No.	: UN 1133
Proper shipping name	: Adhesives
Class	: 3
Packing group	: II
Labels	: Flammable Liquids
Packing instruction (cargo aircraft)	: 364
Packing instruction (passenger aircraft)	: 353

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**IMDG**

UN number : UN 1133  
 Proper shipping name : ADHESIVES

Class : 3  
 Packing group : II  
 Labels : 3  
 EmS Code : F-E, S-D  
 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****DOT Classification**

UN/ID/NA number : UN 1133  
 Proper shipping name : ADHESIVES

Class : 3  
 Packing group : II  
 Labels : FLAMMABLE LIQUID  
 ERG Code : 128  
 Marine pollutant : no

**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****CERCLA Reportable Quantity**

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
methyl methacrylate	80-62-6	1000	1939
hydroquinone	123-31-9	100	*

\*: Calculated RQ exceeds reasonably attainable upper limit.

**SARA 311/312 Hazards** : Flammable (gases, aerosols, liquids, or solids)  
 Respiratory or skin sensitisation  
 Skin corrosion or irritation  
 Serious eye damage or eye irritation  
 Specific target organ toxicity (single or repeated exposure)

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

methyl methacrylate      80-62-6      >= 50 - < 70 %

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zinc oxide 1314-13-2 &gt;= 1 - &lt; 5 %

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

methyl methacrylate 80-62-6

**California Prop. 65**

WARNING: This product can expose you to chemicals including Talc ( $Mg_3H_2(SiO_3)_4$ ), which is/are known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

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

DSL	: This product contains one or several components that are not on the Canadian DSL nor NDSL.
AIIC	: Not in compliance with the inventory
NZIoC	: Not in compliance with the inventory
ENCS	: Not in compliance with the inventory
KECI	: Not in compliance with the inventory
PICCS	: Not in compliance with the inventory
IECSC	: Notified. Allowed to be imported / manufactured only by the notifiers. Please contact your Huntsman sales representative for more information.
TCSI	: On the inventory, or in compliance with the inventory
TSCA	: On or in compliance with the active portion of the TSCA inventory

**Inventories**

AIIC (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

**TSCA - 5(a) Significant New Use Rule List of Chemicals**

No substances are subject to a Significant New Use Rule.

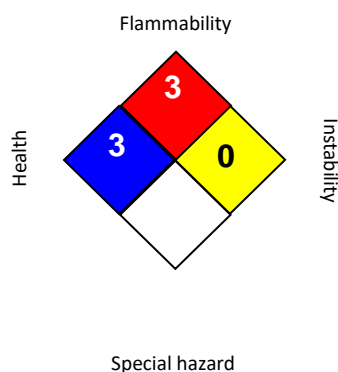
**US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)**

No substances are subject to TSCA 12(b) export notification requirements.

**ARALDITE® 2053-15 A**

Version 1.0      Revision Date: 06/03/2021      SDS Number: 400000011046      Date of last issue: -  
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**SECTION 16. OTHER INFORMATION****Further information****NFPA 704:****HMIS® IV:**

<b>HEALTH</b>		<b>3</b>
<b>FLAMMABILITY</b>		<b>3</b>
<b>PHYSICAL HAZARD</b>		<b>0</b>

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "\*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard

Revision Date : 06/03/2021

ACGIH : USA. ACGIH Threshold Limit Values (TLV)  
 NIOSH REL : USA. NIOSH Recommended Exposure Limits  
 OSHA P0 : USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000

OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants  
 OSHA Z-3 : USA. Occupational Exposure Limits (OSHA) - Table Z-3 Mineral Dusts

ACGIH / TWA : 8-hour, time-weighted average  
 ACGIH / STEL : Short-term exposure limit  
 NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek  
 NIOSH REL / ST : STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday

NIOSH REL / C : Ceiling value not be exceeded at any time.  
 OSHA P0 / TWA : 8-hour time weighted average  
 OSHA P0 / STEL : Short-term exposure limit  
 OSHA Z-1 / TWA : 8-hour time weighted average  
 OSHA Z-3 / TWA : 8-hour time weighted average

The information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.



**ARALDITE® 2053-15 A**

Version	Revision Date:	SDS Number:	Date of last issue: -
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THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

The trademarks above are the property of Huntsman Corporation or an affiliate thereof.

NO PERSON OR ORGANIZATION EXCEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE.



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**HARDENER 2053 B**

Version 1.0      Revision Date: 07/14/2020      SDS Number: 400000009980      Date of last issue: -  
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**SECTION 1. IDENTIFICATION**

Product name : HARDENER 2053 B

**Manufacturer or supplier's details**

Company name of supplier : Huntsman Advanced Materials Americas LLC  
 Address : P.O. Box 4980  
 The Woodlands,  
 TX 77387  
 United States of America (USA)  
 Telephone : Non-Emergency: (800) 257-5547

E-mail address of person responsible for the SDS : Global\_Product\_EHS\_AdMat@huntsman.com

Emergency telephone number : Chemtrec: (800) 424-9300 or (703) 527-3887

**Recommended use of the chemical and restrictions on use**

Recommended use : Hardener

**SECTION 2. HAZARDS IDENTIFICATION****GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)**

Eye irritation : Category 2A

Skin sensitisation : Category 1

Short-term (acute) aquatic hazard : Category 1

Long-term (chronic) aquatic hazard : Category 1



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**GHS label elements**

Hazard pictograms :



Signal word : Warning

Hazard statements : H317 May cause an allergic skin reaction.  
 H319 Causes serious eye irritation.  
 H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**  
 P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
 P264 Wash skin thoroughly after handling.

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P272 Contaminated work clothing must not be allowed out of the workplace.

P273 Avoid release to the environment.

P280 Wear protective gloves/ eye protection/ face protection.

**Response:**

P302 + P352 IF ON SKIN: Wash with plenty of soap and 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.

P363 Wash contaminated clothing before reuse.

P391 Collect spillage.

**Storage:**

Not available

**Disposal:**

P501 Dispose of contents/container to an approved facility in accordance with local, regional, national and international regulations.

**Other hazards**

None known.

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

Substance / Mixture : Mixture

**Hazardous components**

Chemical name	CAS-No.	Concentration (% w/w)
dibenzoyl peroxide	94-36-0	10 - 20

**SECTION 4. FIRST AID MEASURES**

- General advice : Move out of dangerous area.  
Show this safety data sheet to the doctor in attendance.  
Treat symptomatically.  
Get medical attention if symptoms occur.
- If inhaled : If inhaled, remove to fresh air.  
Get medical attention if symptoms occur.
- In case of skin contact : If on skin, rinse well with water.
- In case of eye contact : Immediately flush eye(s) with plenty of water.  
Remove contact lenses.  
Keep eye wide open while rinsing.  
If eye irritation persists, consult a specialist.

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- If swallowed : Keep respiratory tract clear.  
Never give anything by mouth to an unconscious person.  
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : None known.
- Notes to physician : Treat symptomatically.

**SECTION 5. FIREFIGHTING MEASURES**

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- 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 firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.  
Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Prevent product from entering drains.  
Prevent further leakage or spillage if safe to do so.  
If the product contaminates rivers and lakes or drains inform respective authorities.
- 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**

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- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitisation of susceptible persons. Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product.  
Do not breathe vapours/dust.  
Avoid exposure - obtain special instructions before use.  
Avoid contact with skin and eyes.  
For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the application area.  
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
Keep in properly labelled containers.
- Materials to avoid : For incompatible materials please refer to Section 10 of this SDS.
- Recommended storage temperature : 41 - 77 °F / 5 - 25 °C
- Further information on storage stability : Stable under normal conditions.

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Components with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
dibenzoyl peroxide	94-36-0	TWA	5 mg/m <sup>3</sup>	ACGIH
		TWA	5 mg/m <sup>3</sup>	OSHA Z-1
		TWA	5 mg/m <sup>3</sup>	NIOSH REL
		TWA	5 mg/m <sup>3</sup>	OSHA P0

**Personal protective equipment**

- Respiratory protection : No personal respiratory protective equipment normally required.
- Hand protection
- Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.
- Eye protection : Eye wash bottle with pure water  
Tightly fitting safety goggles

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Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : Impervious clothing  
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures : When using do not eat or drink.  
When using do not smoke.  
Wash hands before breaks and at the end of workday.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance	: paste
Colour	: black
Odour	: characteristic
Odour Threshold	: No data is available on the product itself.
pH	: No data is available on the product itself.
Freezing point	: No data is available on the product itself.
Melting point	: No data is available on the product itself.
Boiling point	: No data is available on the product itself.
Flash point	: No data is available on the product itself.
Evaporation rate	: No data is available on the product itself.
Flammability (solid, gas)	: No data is available on the product itself.
Flammability (liquids)	: No data is available on the product itself.
Upper explosion limit / Upper flammability limit	: No data is available on the product itself.
Lower explosion limit / Lower flammability limit	: No data is available on the product itself.
Vapour pressure	: No data is available on the product itself.
Relative vapour density	: No data is available on the product itself.
Relative density	: No data is available on the product itself.
Density	: 1.2 g/cm <sup>3</sup> (68 °F / 20 °C)
Solubility(ies)	
Water solubility	: insoluble, immiscible
Solubility in other solvents	: No data is available on the product itself.

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Partition coefficient: n-octanol/water : No data is available on the product itself.  
Auto-ignition temperature : No data is available on the product itself.  
Thermal decomposition : No data is available on the product itself.  
Self-Accelerating decomposition temperature (SADT) : 122 °F / 50 °C  
Viscosity  
Viscosity, dynamic : 83,000 mPa.s (77 °F / 25 °C)  
Explosive properties : No data is available on the product itself.  
Oxidizing properties : No data is available on the product itself.  
Particle size : No data is available on the product itself.

**SECTION 10. STABILITY AND REACTIVITY**

Reactivity : No dangerous reaction known under conditions of normal use.  
Chemical stability : Stable under normal conditions.  
Possibility of hazardous reactions : No hazards to be specially mentioned.  
Conditions to avoid : None known.  
Incompatible materials : None known.  
Hazardous decomposition products : No hazardous decomposition products are known.

**SECTION 11. TOXICOLOGICAL INFORMATION**

Information on likely routes of exposure : No data is available on the product itself.

**Acute toxicity****Components:**

dibenzoyl peroxide:

Acute oral toxicityComponents : LD50 (Mouse, male and female): > 2,000 mg/kg  
Method: OECD Test Guideline 401  
Assessment: The substance or mixture has no acute oral toxicity

**Components:**

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dibenzoyl peroxide:  
Acute inhalation toxicity : LC50 (Rat, male): > 24.3 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : No data available

Acute toxicity (other routes of administration) : No data available

**Skin corrosion/irritation****Components:**

dibenzoyl peroxide:  
Species: Rabbit  
Method: OECD Test Guideline 404  
Result: No skin irritation

**Serious eye damage/eye irritation****Components:**

dibenzoyl peroxide:  
Species: Rabbit  
Result: Irritating to eyes.  
Method: OECD Test Guideline 405

**Respiratory or skin sensitisation****Components:**

dibenzoyl peroxide:  
Exposure routes: Skin  
Species: Mouse  
Assessment: May cause sensitisation by skin contact.  
Method: OECD Test Guideline 429  
Result: Causes sensitisation.

Assessment: No data available

**Germ cell mutagenicity****Components:**

dibenzoyl peroxide:  
Genotoxicity in vitro : Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative  
  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative

**Components:**

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dibenzoyl peroxide:  
Genotoxicity in vivo : Cell type: Somatic  
Application Route: Intraperitoneal injection  
Dose: 0, 50, 100, 200 mg/kg b.w.  
Method: OECD Test Guideline 474  
Result: negative

Germ cell mutagenicity-  
Assessment : No data available

**Carcinogenicity****Components:**

dibenzoyl peroxide:  
Species: Mouse, male and female  
Application Route: Dermal  
Exposure time: 104 weeks  
Result: negative

Carcinogenicity -  
Assessment : No data available

**IARC**

Group 1: Carcinogenic to humans  
silicon dioxide  
(Silica dust, crystalline)

**ACGIH**

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

**OSHA**

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**NTP**

Known to be human carcinogen  
silicon dioxide  
(Silica, Crystalline (Respirable Size))

**Reproductive toxicity****Components:**

dibenzoyl peroxide:  
Effects on fertility : Species: Rat, male and female  
Application Route: Oral  
Dose: 0, 250, 500, 1,000 mg/kg b.w/  
General Toxicity - Parent: No observed adverse effect level:  
500 mg/kg body weight  
General Toxicity F1: No observed adverse effect level: 500  
mg/kg body weight  
Method: OECD Test Guideline 422

**Components:**

dibenzoyl peroxide:  
Effects on foetal  
development : Species: Rat  
Dose: 100, 300 or 1000 mg/kg/day

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General Toxicity Maternal: No observed adverse effect level:  
300 mg/kg body weight  
Developmental Toxicity: No observed adverse effect level:  
300 mg/kg body weight  
Method: OECD Test Guideline 414

Reproductive toxicity - Assessment : No data available

**STOT - single exposure**

No data available

**STOT - repeated exposure**

No data available

**Repeated dose toxicity****Components:**

dibenzoyl peroxide:  
Species: Rat, male and female  
NOAEL: > 100 mg/kg  
Application Route: Skin contact  
Number of exposures: 2 years  
Method: OECD Test Guideline 451

Repeated dose toxicity - Assessment : No data available

**Aspiration toxicity**

No data available

**Experience with human exposure**

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

**Toxicology, Metabolism, Distribution**

No data available

**Neurological effects**

No data available

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**Further information**

Ingestion: No data available

**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Components:**

dibenzoyl peroxide:  
Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.0602 mg/l  
Exposure time: 96 h  
Test Type: semi-static test  
Test substance: Fresh water  
Method: OECD Test Guideline 203

**Components:**

dibenzoyl peroxide:  
Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 0.11 mg/l  
aquatic invertebrates  
Exposure time: 48 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 202

**Components:**

dibenzoyl peroxide:  
Toxicity to algae/aquatic : EbC50 (Selenastrum capricornutum (green algae)): 0.0422  
plants  
mg/l  
Exposure time: 72 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 201

**Components:**

dibenzoyl peroxide:  
M-Factor (Acute aquatic : 10  
toxicity)  
Toxicity to fish (Chronic : No data available  
toxicity)

**Components:**

dibenzoyl peroxide:  
Toxicity to daphnia and other : EC10 (Daphnia magna (Water flea)): 0.001 mg/l  
aquatic invertebrates  
(Chronic toxicity)  
Exposure time: 21 d  
Test Type: semi-static test  
Method: OECD Test Guideline 211

**Components:**

dibenzoyl peroxide:

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M-Factor (Chronic aquatic toxicity) : 10

**Components:**

dibenzoyl peroxide:

Toxicity to microorganisms : EC50 (activated sludge): 35 mg/l  
 Exposure time: 0.5 h  
 Test Type: static test  
 Test substance: Fresh water  
 Method: OECD Test Guideline 209

Toxicity to soil dwelling organisms : No data available

Plant toxicity : No data available

Sediment toxicity : No data available

Toxicity to terrestrial organisms : No data available

Ecotoxicology Assessment Acute aquatic toxicity : No data available

Chronic aquatic toxicity : No data available

Toxicity Data on Soil : No data available

Other organisms relevant to the environment : No data available

**Persistence and degradability****Components:**

dibenzoyl peroxide:

Biodegradability : Inoculum: activated sludge  
 Concentration: 4 mg/l  
 Result: Readily biodegradable.  
 Biodegradation: 68 %  
 Exposure time: 28 d  
 Method: OECD Test Guideline 301D

Biochemical Oxygen Demand (BOD) : No data available

Chemical Oxygen Demand (COD) : No data available

BOD/COD : No data available

ThOD : No data available

BOD/ThOD : No data available

Dissolved organic carbon : No data available

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(DOC)

Physico-chemical  
removability : No data available

Stability in water : No data available

Photodegradation : No data available

Impact on Sewage  
Treatment : No data available**Bioaccumulative potential**

Bioaccumulation : No data available

**Components:**

dibenzoyl peroxide:  
Partition coefficient: n-  
octanol/water : log Pow: 3.2 (72 °F / 22 °C)  
pH: 7.02  
Method: OECD Test Guideline 117

**Mobility in soil**

Mobility : No data available

**Components:**

dibenzoyl peroxide:  
Distribution among  
environmental compartments : Koc: 6309.57  
Method: OECD Test Guideline 121

Stability in soil : No data available

**Other adverse effects**Environmental fate and  
pathways : No data availableResults of PBT and vPvB  
assessment : No data availableEndocrine disrupting  
potential : No data availableAdsorbed organic bound  
halogens (AOX) : No data available**Hazardous to the ozone layer**

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82  
Protection of Stratospheric Ozone - CAA Section 602 Class I  
Substances  
Remarks: This product neither contains, nor was  
manufactured with a Class I or Class II ODS as defined by the  
U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A +  
B).

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Additional ecological information - Product : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.

Global warming potential (GWP) : No data available

**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**

Waste from residues : The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Dispose of contents/ container to an approved waste disposal plant.

Contaminated packaging : Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

**SECTION 14. TRANSPORT INFORMATION****International Regulations****IATA**

UN/ID No. : UN 3077

Proper shipping name : Environmentally hazardous substance, solid, n.o.s. (DIBENZOYL PEROXIDE)

Class : 9

Packing group : III

Labels : Miscellaneous

Packing instruction (cargo aircraft) : 956

Packing instruction (passenger aircraft) : 956

Environmentally hazardous : yes

**IMDG**

UN number : UN 3077

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (DIBENZOYL PEROXIDE)

Class : 9

Packing group : III

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Labels	: 9
EmS Code	: F-A, S-F
Marine pollutant	: yes

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

Not applicable for product as supplied.

**National Regulations****DOT Classification**

UN/ID/NA number	: UN 3077
Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (DIBENZOYL PEROXIDE)
Class	: 9
Packing group	: III
Labels	: CLASS 9
ERG Code	: 171
Marine pollutant	: yes(DIBENZOYL PEROXIDE)
Remarks	: Above applies only to containers over 119 gallons or 450 liters. Not regulated if shipped in packages less than or equal to 119 gallons (450 liters).

**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****CERCLA Reportable Quantity**

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

<b>SARA 311/312 Hazards</b>	: Respiratory or skin sensitisation Serious eye damage or eye irritation
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<b>SARA 313</b>	: The following components are subject to reporting levels established by SARA Title III, Section 313:
-----------------	--------------------------------------------------------------------------------------------------------

dibenzoyl peroxide	94-36-0	>= 10 - < 20 %
--------------------	---------	----------------

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**

This product contains a chemical that is at or below California Propositions 65's "safe harbor level" for carcinogenicity as determined via a risk assessment. Therefore, the chemical is not required to be listed as a Prop 65 chemical on the SDS or label.

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

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DSL : All components of this product are on the Canadian DSL

AICS : On the inventory, or in compliance with the inventory

NZIoC : Not in compliance with the inventory

ENCS : Not in compliance with the inventory

KECI : On the inventory, or in compliance with the inventory

PICCS : Not in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

TCSI : On the inventory, or in compliance with the inventory

TSCA : On the inventory, or in compliance with the inventory

**Inventories**

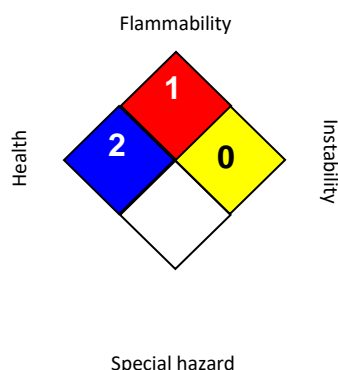
AICS (Australia), AIIC (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

**TSCA - 5(a) Significant New Use Rule List of Chemicals**

No substances are subject to a Significant New Use Rule.

**US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)**

No substances are subject to TSCA 12(b) export notification requirements.

**SECTION 16. OTHER INFORMATION****Further information****NFPA 704:****HMIS® IV:**

<b>HEALTH</b>		<b>2</b>
<b>FLAMMABILITY</b>		<b>1</b>
<b>PHYSICAL HAZARD</b>		<b>0</b>

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "\*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard

Revision Date : 07/14/2020



**HARDENER 2053 B**

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	07/14/2020	400000009980	Date of first issue: 07/14/2020

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ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL	:	USA. NIOSH Recommended Exposure Limits
OSHA P0	:	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
OSHA P0 / TWA	:	8-hour time weighted average
OSHA Z-1 / TWA	:	8-hour time weighted average

The information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

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THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

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