

ENDURIS 3504 1GP

SAFETY DATA SHEET

1 PRODUCT AND COMPANY IDENTIFICATION

Product name: ENDURIS 3504 1GP

Recommended use: Protection of construction materials

Limitations on use: For industrial use only.

Manufacturer/Importer/Distributor Information : Momentive Performance Materials GmbH
Chempark Leverkusen Gebaeude V7
DE - 51368 Leverkusen
Germany

Contact person : commercial.services@momentive.com

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00800.4321.1000 (Customer Service Centre)

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2 HAZARDS IDENTIFICATION

GHS classification:

Health Hazards:

Carcinogenicity

Category 1A

GHS label elements:

Symbol(s):



Signal Word: Danger

Hazard Statement(s): May cause cancer.

Precautionary Statements Prevention:

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection.

Response: IF exposed or concerned: Get medical advice/attention.

Storage: Store locked up.

Disposal: 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.

Other hazards which do not result in classification:

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Primary hazards: No data available.

Specific hazards: No data available.

3 COMPOSITION / INFORMATION ON INGREDIENTS

Chemical nature: Mixture of polydimethylsiloxanes, fillers and cross-linkers.

Substance or Preparation:

Mixtures

Hazardous ingredients:

Chemical Identity	CAS number	Concentration*
Titanium, Bis(ethyl acetoacetato)-diisopropoxy	27858-32-8	>=1 - <10%
QUARTZ	14808-60-7	>=0.1 - <1%
Octamethylcyclotetrasiloxane	556-67-2	>=0.1 - <1%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4 FIRST AID MEASURES

Inhalation: If inhaled, remove to fresh air. If not breathing give artificial respiration using a barrier device. If breathing is difficult give oxygen. Get medical attention.

Eye contact: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Skin Contact: Wash contaminated clothing before reuse. In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention.

Ingestion Do NOT induce vomiting. Give small amounts of water to drink. Get medical attention.

Likely Acute or Delayed Symptoms/Effects Treatment is symptomatic and supportive.

Notes to the physician: No data available.

5 FIRE-FIGHTING MEASURES

Extinguishing media: Water spray Carbon dioxide Foam.

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazard arising from the chemical: In case of fire, carbon monoxide and carbon dioxide may be formed. Acute overexposure to the products of combustion may result in irritation of the respiratory tract. Measurements at temperatures above 150°C in presence of air (oxygen) have shown that small amounts of formaldehyde are formed due to oxidative degradation.

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Special fire fighting procedures:

Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Use standard firefighting procedures and consider the hazards of other involved materials.

Special protective action for fire fighters:

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Product releases methanol during application and curing. Avoid contact with eyes, skin, and clothing. Use only in well-ventilated areas. Avoid inhalation of vapors and spray mists. Keep container closed. Keep out of reach of children.

Environmental Precautions:

Do not allow runoff to sewer, waterway or ground.

Methods and material for containment and cleaning up:

Remove sources of ignition. Take up with an absorbent for chemicals or, otherwise use dry sand.

Notification Procedures:

No data available.

7 HANDLING AND STORAGE

Precautions for safe handling:

Avoid contact with eyes, skin, and clothing. Avoid breathing vapor. See Section 8 of the SDS for Personal Protective Equipment. Use only in well-ventilated areas.

Condition for safe storage, including any incompatibilities:

Keep container tightly closed and in a well-ventilated place. Keep in an area equipped with solvent resistant flooring. Store in original container, protected from direct sunlight.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Appropriated engineering control measures:

Ventilation and other forms of engineering controls are preferred for controlling exposures. Respiratory protection may be needed for non-routine or emergency situations.

Occupational Exposure Limits:

Chemical name	Type	Exposure Limit Values	Source
QUARTZ - Respirable dust.	TWA	0.1 mg/m3	Singapore. PELs. (Workplace Safety and Health (Permissible Exposure Levels of Toxic Substances) Order) (2006)

Personal protective equipment (ppe)

Respiratory Protection:

Wear suitable respiratory protection.

Eye Protection:

Safety glasses with side shields

Hand Protection:

Chemical resistant gloves

Skin Protection:

Wear rubber apron. Wear suitable protective clothing and eye/face protection.

Hygiene measures:

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance

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Physical state:	liquid
Form:	liquid
Color:	Gray
Odor:	No data available.
Odor Threshold:	No data available.
pH:	No data available.
Freezing point:	No data available.
Boiling Point:	No data available.
Flash Point:	70 °C
Evaporation Rate:	No data available.
Flammability (solid, gas):	No data available.
Flammability Limit - Upper (%):	No data available.
Flammability Limit - Lower (%):	No data available.
Vapor pressure:	No data available.
Vapor density (air=1):	No data available.
Density:	No data available.
Relative density:	1.3
Solubility(ies)	
Solubility in Water:	No data available.
Solubility (other):	No data available.
Partition coefficient (n-octanol/water) Log Pow:	No data available.
Autoignition Temperature:	No data available.
Decomposition Temperature:	No data available.
SADT:	No data available.
Viscosity, dynamic:	No data available.
Viscosity, kinematic:	No data available.
Explosive properties:	No data available.
Oxidizing properties:	No data available.

10 STABILITY AND REACTIVITY

Incompatible Materials:	Oxidizing agents. Water.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Hazardous polymerisation does not occur.
Conditions to avoid:	Keep away from heat. Keep away from sources of ignition - No smoking.
Hazardous Decomposition Products:	Carbon dioxide Silicon dioxide. Formaldehyde. Measurements at temperatures above 150°C in presence of air (oxygen) have shown that small amounts of formaldehyde are formed due to oxidative degradation.

11 TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation:	No data available.
Ingestion:	No data available.
Skin Contact:	No data available.

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Eye contact: No data available.

Information on toxicological effects

Acute toxicity

Oral

Product: Not classified for acute toxicity based on available data.

Specified substance(s)

Titanium, Bis(ethyl acetoacetato)-diisopropoxy

No data available.

QUARTZ

No data available.

Octamethylcyclotetrasiloxane

LD 50 (Rat): 4,800 mg/kg (OECD-Guideline 401 (Acute Oral Toxicity)) Not classified

Dermal

Product:

Not classified for acute toxicity based on available data.

Specified substance(s)

Titanium, Bis(ethyl acetoacetato)-diisopropoxy

No data available.

QUARTZ

No data available.

Octamethylcyclotetrasiloxane

LD 50 (Rat): > 2,400 mg/kg (OECD Test Guideline 402)
Not classified

Inhalation

Product:

Not classified for acute toxicity based on available data.

Specified substance(s)

Titanium, Bis(ethyl acetoacetato)-diisopropoxy

No data available.

QUARTZ

No data available.

Octamethylcyclotetrasiloxane

LC50 (Rat, 4 h): 36 mg/l (OECD Test Guideline 403)

Repeated dose toxicity

Product:

No data available.

Specified substance(s)

Titanium, Bis(ethyl acetoacetato)-diisopropoxy

No data available.

QUARTZ

No data available.

Octamethylcyclotetrasiloxane

No data available.

Skin Corrosion/Irritation:

Product:

No data available.

Specified substance(s)

Titanium, Bis(ethyl acetoacetato)-diisopropoxy

No data available.

QUARTZ

No data available.

Octamethylcyclotetrasiloxane

OECD-Guideline 404 (Acute Dermal Irritation/Corrosion) (Rat): No skin irritation

Serious Eye Damage/Eye

Irritation:

Product:

No data available.

Specified substance(s)

Titanium, Bis(ethyl acetoacetato)-diisopropoxy

No data available.

QUARTZ

No data available.

Octamethylcyclotetrasiloxane

No data available.

Respiratory or Skin

Sensitization:

Product:

No data available.

Specified substance(s)

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Titanium, Bis(ethyl acetoacetato)-diispropoxy	No data available.
QUARTZ	No data available.
Octamethylcyclotetrasiloxane	Maximisation Test, OECD-Guideline 406 (Skin Sensitisation) (Guinea Pig): Not sensitizing

Germ Cell Mutagenicity

In vitro

Product:	No data available.
Specified substance(s)	
Titanium, Bis(ethyl acetoacetato)-diispropoxy	No data available.
QUARTZ	No data available.
Octamethylcyclotetrasiloxane	Ames-Test (OECD-Guideline 471 (Genetic Toxicology: Salmonella typhimurium, Reverse Mutation Assay)): negative (not mutagenic) Mouse Lymphoma Assay (OECD Guideline 476): negative (not mutagenic)

In vivo

Product:	No data available.
Specified substance(s)	
Titanium, Bis(ethyl acetoacetato)-diispropoxy	No data available.
Titanium, Bis(ethyl acetoacetato)-diispropoxy	
QUARTZ	No data available.
QUARTZ	Chromosomal aberration (OECD-Guideline 474 (Genetic Toxicology: Micronucleus Test))
Octamethylcyclotetrasiloxane	Inhalation (Rat, male and female): negative

Carcinogenicity

Product:	No data available.
Specified substance(s)	
Titanium, Bis(ethyl acetoacetato)-diispropoxy	No data available.
QUARTZ	No data available.
Octamethylcyclotetrasiloxane	No data available.

Reproductive toxicity

Product:	No data available.
Specified substance(s)	
Titanium, Bis(ethyl acetoacetato)-diispropoxy	No data available.
QUARTZ	No data available.
Octamethylcyclotetrasiloxane	No data available.

Specific Target Organ Toxicity - Single Exposure

Product:	No data available.
Specified substance(s)	
Titanium, Bis(ethyl acetoacetato)-diispropoxy	No data available.
QUARTZ	No data available.
Octamethylcyclotetrasiloxane	No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product:	No data available.
Specified substance(s)	
Titanium, Bis(ethyl acetoacetato)-diispropoxy	No data available.
QUARTZ	No data available.
Octamethylcyclotetrasiloxane	No data available.

Aspiration Hazard

Product:	No data available.
Specified substance(s)	

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Titanium, Bis(ethyl
acetoacetato)-diisopropoxy
QUARTZ
Octamethylcyclotetrasiloxane

No data available.
No data available.
No data available.

Metabolism:

No data available.

Other effects:

Decamethylcyclopentasiloxane

Rodents repeatedly exposed to decamethylcyclopentasiloxane (D5) via inhalation or ingestion developed increased liver weights relative to unexposed control animals. When the exposure was stopped, livers returned to normal. Microscopic examination of the liver cells did not show any evidence of pathology. Liver enlargement was due to an increase in metabolizing enzymes, and a temporary increase in the number and size of normal cells (hyperplasia and hypertrophy). These biochemical pathways are more sensitive in rodents than in humans. Inhalation exposures that are typical in industrial use (5-10 ppm) showed no toxic effects in rodents.

A two-year combined chronic toxicity and carcinogenicity inhalation study was conducted with decamethylcyclopentasiloxane (D5) in Fisher-344 rats by whole body inhalation. A statistically significant increase in the trend for uterine endometrial tumors was observed in female rats exposed for 24 months at the highest dose level of 160 ppm. The same effects were not seen at the other dose levels of 10 and 40 ppm. No adverse effects were seen at male rats at any level. Whether or not this increase in incidence is truly related to the exposure to D5 is questionable and yet to be determined. Based on our present knowledge, it is unlikely that industrial, commercial, or consumer uses of products containing D5 would result in a significant risk to humans. Momentive's Recommended Exposure Guideline for D5 is 10 ppm.

Octamethylcyclotetrasiloxane (D4) Ingestion: Rodents given large doses via oral gavage of Octamethylcyclotetrasiloxane (1600mg/kg/day, 14 days), developed increased liver weights relative to unexposed control animals due to hepatocellular hyperplasia (increased number of liver cells which appear normal) as well as hypertrophy (increased cell size). Inhalation: In inhalation studies, laboratory rodents exposed to Octamethylcyclotetrasiloxane (300 ppm five days/week, 90 days) developed increased liver weights in female animals relative to unexposed control animals. When the exposure was stopped, liver weights returned to normal. Microscopic examination of the liver cells did not show any evidence of pathology. This response in rats, which does not affect the animal's health, is well-documented and widely recognized. It is related to an increase of liver enzymes that metabolize and eliminate a material from the body. The increased liver weight reverses even while the D4 exposure continues. The finding is not adverse, but is considered a natural adaptive change in rats, and does not represent a hazard to humans. Inhalation studies utilizing laboratory rabbits and guinea pigs showed no effects on liver weights. Inhalation exposures typical of industrial usage (5-10 ppm) showed no toxic effects in rodents. Range finding reproductive studies were conducted (whole body inhalation, 70 days prior to mating, through mating, gestation and lactation), with D4. Rats were exposed to 70 and 700 ppm. In the 700 ppm group, there was a statistically significant reduction in mean litter size and in implantation sites. No D4 related clinical signs were observed in the pups and no exposure related pathological findings were found. A two-year, combined chronic/carcinogenicity study, during which rats were exposed to D4 by inhalation, data showed a statistically significant increase in a benign uterine tumor in female rats exposed at the highest level--a level much higher than the low levels that consumers or workers may encounter. An expert panel of independent scientists who have reviewed the results of this research concur that the finding seen in the two-year

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study occurred through a biological pathway that is specific to the rat and is not relevant to humans. Therefore, this observed effect does not indicate a potential health hazard to humans. In developmental toxicity studies, rats and rabbits were exposed to D4 at concentrations up to 700 ppm and 500 ppm, respectively. No teratogenic effects (birth defects) were observed in either study.

12 ECOLOGICAL INFORMATION

General information: Not applicable

Ecotoxicity

Acute toxicity

Fish

Product: No data available.

Specified substance(s):

Titanium, Bis(ethyl acetoacetato)-diisopropoxy No data available.

QUARTZ No data available.

Octamethylcyclotetrasiloxane No data available.

Aquatic Invertebrates

Product: No data available.

Specified substance(s):

Titanium, Bis(ethyl acetoacetato)-diisopropoxy No data available.

QUARTZ No data available.

Octamethylcyclotetrasiloxane No data available.

Chronic Toxicity

Fish

Product: No data available.

Specified substance(s):

Titanium, Bis(ethyl acetoacetato)-diisopropoxy No data available.

QUARTZ No data available.

Octamethylcyclotetrasiloxane No data available.

Aquatic Invertebrates

Product: No data available.

Specified substance(s):

Titanium, Bis(ethyl acetoacetato)-diisopropoxy No data available.

QUARTZ No data available.

Octamethylcyclotetrasiloxane No data available.

Toxicity to Aquatic Plants

Product: No data available.

Specified substance(s):

Titanium, Bis(ethyl acetoacetato)-diisopropoxy No data available.

QUARTZ No data available.

Octamethylcyclotetrasiloxane No data available.

Persistence and Degradability

Biodegradation

Product: No data available.

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Specified substance(s):

Titanium, Bis(ethyl acetoacetato)-diisopropoxy	No data available.
QUARTZ	No data available.
Octamethylcyclotetrasiloxane	3.7 % (29 d, 310 Ready Biodegradability - CO ₂ in Sealed Vessels (Headspace Test)) Not readily biodegradable.

BOD/COD Ratio

Product: No data available.

Specified substance(s):

Titanium, Bis(ethyl acetoacetato)-diisopropoxy	No data available.
QUARTZ	No data available.
Octamethylcyclotetrasiloxane	No data available.

Bioaccumulative potential

Product: No data available.

Specified substance(s):

Titanium, Bis(ethyl acetoacetato)-diisopropoxy	No data available.
QUARTZ	No data available.
Octamethylcyclotetrasiloxane	Fathead Minnow, Bioconcentration Factor (BCF): 12.40

Mobility in soil: No data available.

Known or predicted distribution to environmental compartments

Titanium, Bis(ethyl acetoacetato)-diisopropoxy	No data available.
QUARTZ	No data available.
Octamethylcyclotetrasiloxane	No data available.

Results of PBT and vPvB assessment: No data available.

Titanium, Bis(ethyl acetoacetato)-diisopropoxy	No data available.
QUARTZ	No data available.
Octamethylcyclotetrasiloxane	No data available.

Other adverse effects: No data available.

13 Disposal considerations

General information: Do not discharge into drains, water courses or onto the ground. See Section 8 for information on appropriate personal protective equipment.

Disposal methods: Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

The generation of waste should be avoided or minimized wherever possible. The hazard and precautionary statements displayed on the label also apply to any residues left in the container.

14 TRANSPORT INFORMATION

ADR/RID

Not regulated.

IMDG - International Maritime Dangerous Goods Code

Not regulated.

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IATA

Not regulated.

Special precautions for user:

This product is Combustible as defined by the US Department of Transportation (DOT). It is regulated for transport in the US in container > 119 gallons. The product is not regulated for transport by the IATA, ADR/RID, ADNR or the IMDG regulations.

15 REGULATORY INFORMATION

Applicable regulations:

Singapore. PELs. (Workplace Safety and Health (Permissible Exposure Levels of Toxic Substances) Order)

16 OTHER INFORMATION

Inventory Status

Australia AICS:	On or in compliance with the inventory	Remarks: None.
Canada DSL Inventory List:	On or in compliance with the inventory	Remarks: None.
Philippines PICCS:	On or in compliance with the inventory	Remarks: None.
US TSCA Inventory:	On or in compliance with the inventory	Remarks: On TSCA Inventory
Taiwan Chemical Substance Inventory:	On or in compliance with the inventory	Remarks: None.
EINECS, ELINCS or NLP:	On or in compliance with the inventory	Remarks: None.
Japan (ENCS) List:	On or in compliance with the inventory	Remarks: None.
China Inv. Existing Chemical Substances:	On or in compliance with the inventory	Remarks: None.
Korea Existing Chemicals Inv. (KECI):	Not in compliance with the inventory.	Remarks: None.
Canada NDSL Inventory:	Not in compliance with the inventory.	Remarks: None.
New Zealand Inventory of Chemicals:	Not in compliance with the inventory.	Remarks: None.

Revision Information: ARGLO_INVSTSARGHS_SG
Issue Date: 2018/09/19

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Disclaimer:

Notice to reader

Unless otherwise specified in section 1.2, Momentive Products are intended for industrial application only.

They are not intended for specific medical applications, neither for long-lasting (> 30 days) implantation into the human body, injected or directly ingested, nor for the manufacture of multiple usable contraceptives.

Further Information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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