DOW CORNING(R) 340 HEAT SINK COMPOUND



Version 2.0

Revision Date: 06/29/2015

SDS Number: 953200-00002

Date of last issue: 02/09/2015 Date of first issue: 02/09/2015

NIOSH REL / ST

: STEL - 15-minute TWA exposure that should not be exceeded

at any time during a workday

NIOSH REL / C OSHA Z-1 / TWA : Ceiling value not be exceeded at any time.

: 8-hour time weighted average

Sources of key data used to compile the Material Safety Data Sheet

: Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agen-

cy, http://echa.europa.eu/

Revision Date

: 06/29/2015

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

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 is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

US / Z8

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Substances.

AICS

: All ingredients listed or exempt.

IECSC

: All ingredients listed or exempt.

ENCS/ISHL

: All components are listed on ENCS/ISHL or exempted from

inventory listing.

PICCS

: All ingredients listed or exempt.

DSL

: All chemical substances in this product comply with the CEPA

1999 and NSNR and are on or exempt from listing on the

Canadian Domestic Substances List (DSL).

NZIoC

: All ingredients listed or exempt.

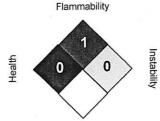
Inventories

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

SECTION 16. OTHER INFORMATION

Further information

NFPA:



Special hazard.

HMIS III:

HEALTH	0	
FLAMMABILITY	1	
PHYSICAL HAZARD	0	

0 = not significant, 1 = Slight, 2 = Moderate, 3 = High

2 = Moderate, 3 = High 4 = Extreme, * = Chronic

Full text of other abbreviations

ACGIH

: USA. ACGIH Threshold Limit Values (TLV)

NIOSH REL OSHA Z-1 USA. NIOSH Recommended Exposure Limits
 USA. Occupational Exposure Limits (OSHA) - Table Z-1 Lim-

its for Air Contaminants

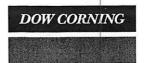
ACGIH / TWA ACGIH / STEL 8-hour, time-weighted average Short-term exposure limit

NIOSH REL / TWA

: Time-weighted average concentration for up to a 10-hour

workday during a 40-hour workweek





Version 2.0

Revision Date: 06/29/2015

SDS Number: 953200-00002 Date of last issue: 02/09/2015 Date of first issue: 02/09/2015

Labels

: CLASS 9

ERG Code

171

Marine pollutant

: yes (Zinc oxide)

Remarks

: Above applies only to containers over 119 gallons or 450 liters., Shipment by ground under DOT is non-regulated; however it may be shipped per the applicable hazard classification to facilitate multi-modal transport involving ICAO (IATA) or

IMO.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

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

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards

: No SARA Hazards

SARA 302

No chemicals in this material are subject to the reporting re-

quirements of SARA Title III, Section 302.

SARA 313

: The following components are subject to reporting levels es-

tablished by SARA Title III, Section 313:

Zinc oxide

1314-13-2

69 %

US State Regulations

Pennsylvania Right To Know

Zinc oxide

1314-13-2

50 - 70 %

Dimethyl siloxane, trimethylsiloxy-terminated 63148-62-9

30 - 50 %

New Jersey Right To Know

Zinc oxide

1314-13-2

50 - 70 %

Dimethyl siloxane, trimethylsiloxy-terminated 63148-62-9

30 - 50 %

California Prop 65

This product does not contain any chemicals known to the

State of California to cause cancer, birth, or any other repro-

ductive defects.

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

KECI

: All ingredients listed, exempt or notified.

REACH

: All ingredients (pre-)registered or exempt.

TSCA

: All chemical substances in this material are included on or

exempted from listing on the TSCA Inventory of Chemical



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DOW COREVING

Version 2.0

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Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14. TRANSPORT INFORMATION

International Regulation

UNRTDG

UN number

: UN 3077

Proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,

N.O.S.

(Zinc oxide)

Class

: 9

Packing group

: 111

Labels

: 9

IATA-DGR

UN/ID No.

: UN 3077

Proper shipping name

: Environmentally hazardous substance, solid, n.o.s.

(Zinc oxide)

Class

: 9

Packing group

: 111

Labels

: Miscellaneous

Packing instruction (cargo

: 956

aircraft)

Packing instruction (passen-

: 956

ger aircraft)

IMDG-Code

UN number

: UN 3077

Proper shipping name

: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,

N.O.S.

(Zinc oxide)

Class

: 9

Packing group

: 111

Labels

9

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

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

Not applicable for product as supplied.

Domestic regulation

49 CFR

UN/ID/NA number

: UN 3077

Proper shipping name

: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,

N.O.S.

(Zinc oxide)

Class

: 9

Packing group

: 111

DOW CORNING(R) 340 HEAT SINK COMPOUND

Version 2.0

Revision Date: 06/29/2015

SDS Number: 953200-00002

Date of last issue: 02/09/2015 Date of first issue: 02/09/2015

Exposure time: 72 h

Method: OECD Test Guideline 201

NOEC (Selenastrum capricornutum (green algae)): 24 µg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

M-Factor (Acute aquatic tox-

icity)

1

Toxicity to fish (Chronic tox-

icity)

: NOEC (Oncorhynchus mykiss (rainbow trout)): 199 µg/l

Exposure time: 30 d

Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chron-

ic toxicity)

: NOEC (Daphnia magna (Water flea)): 37 μg/l

Exposure time: 21 d

Remarks: Based on data from similar materials

M-Factor (Chronic aquatic

toxicity)

1

Toxicity to bacteria

: EC50: 5.2 mg/l Exposure time: 3 h

Method: OECD Test Guideline 209

Remarks: Based on data from similar materials

Persistence and degradability

No data available

Bioaccumulative potential

Ingredients:

Zinc oxide:

Bioaccumulation

: Species: Fish

Bioconcentration factor (BCF): 177

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Resource Conservation and Recovery Act (RCRA)

nd :

: This product has been evaluated for RCRA characteristics and does not meet the criteria of hazardous waste if discarded

in its purchased form.

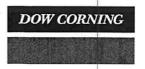
Waste from residues

: Dispose of in accordance with local regulations.

Contaminated packaging

: Dispose of as unused product.

DOW CORNING(R) 340 HEAT SINK COMPOUND



Version

2.0

Revision Date:

06/29/2015

SDS Number:

953200-00002

Date of last issue: 02/09/2015 Date of first issue: 02/09/2015

Species: Rat-

Application Route: Ingestion

Method: OECD Test Guideline 416

Result: negative

Effects on fetal development

Test Type: Embryo-fetal development

Species: Hamster

Application Route: Ingestion

Result: negative

Remarks: Based on data from similar materials

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Not classified based on available information.

Ingredients:

Zinc oxide:

Routes of exposure: inhalation (dust/mist/fume)

Assessment: No significant health effects observed in animals at concentrations of 0.2 mg/l/6h/d or less.

Repeated dose toxicity

Ingredients:

Zinc oxide:

Species: Rat

NOAEL: 1.5 mg/m3

Application Route: inhalation (dust/mist/fume)

Exposure time: 3 m

Method: OECD Test Guideline 413

Aspiration toxicity

Not classified based on available information.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Ingredients:

Zinc oxide:

Toxicity to fish

: LC50 (Oncorhynchus mykiss (rainbow trout)): 330 - 780 µg/l

Exposure time: 96 h

Remarks: Based on data from similar materials

Toxicity to daphnia and other

aquatic invertebrates

: EC50 (Daphnia magna (Water flea)): 6.9 - 16.2 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Toxicity to algae

: EC50 (Selenastrum capricornutum (green algae)): 136 µg/l

DOW CORNING(R) 340 HEAT SINK COMPOUND

Version

Revision Date:

SDS Number:

Date of last issue: 02/09/2015

2.0

06/29/2015

953200-00002

Date of first issue: 02/09/2015

Result: No eye irritation

Method: OECD Test Guideline 405

Respiratory or skin sensitization

Skin sensitization: Not classified based on available information.

Respiratory sensitization: Not classified based on available information.

Ingredients:

Zinc oxide:

Test Type: Maximization Test (GPMT) Routes of exposure: Skin contact

Species: Guinea pig

Method: OECD Test Guideline 406

Result: negative

Germ cell mutagenicity

Not classified based on available information.

Ingredients:

Zinc oxide:

Genotoxicity in vitro

: Test Type: Bacterial reverse mutation assay (AMES)

Method: OECD Test Guideline 471

Result: negative

Genotoxicity in vivo

: Test Type: Mammalian erythrocyte micronucleus test (in vivo

cytogenetic assay)

Species: Rat

Application Route: Inhalation Method: OECD Test Guideline 474

Result: negative

Carcinogenicity

Not classified based on available information.

IARC

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed

human carcinogen by IARC.

OSHA

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcino-

gen by OSHA.

NTP

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen

by NTP.

Reproductive toxicity

Not classified based on available information.

Ingredients:

Zinc oxide:

Effects on fertility

: Test Type: Two-generation reproduction toxicity study

DOW CORNING(R) 340 HEAT SINK COMPOUND

Version

2.0

Revision Date: 06/29/2015

SDS Number:

953200-00002

Date of last issue: 02/09/2015 Date of first issue: 02/09/2015

Chemical stability

: Stable under normal conditions.

Possibility of hazardous reac-

tions

: Use at elevated temperatures may form highly hazardous

compounds.

Can react with strong oxidizing agents.

Hazardous decomposition products will be formed at elevated

temperatures.

Conditions to avoid

: None known.

Incompatible materials

: Oxidizing agents

Hazardous decomposition products

Thermal decomposition

: Formaldehyde

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Skin contact Ingestion Eye contact

Acute toxicity

Not classified based on available information.

Ingredients:

Zinc oxide:

Acute oral toxicity

: LD50 (Rat): > 5,000 mg/kg

Method: OECD Test Guideline 401

Acute inhalation toxicity

: LC50 (Rat): > 5.7 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Method: OECD Test Guideline 403

Assessment: The substance or mixture has no acute inhala-

tion toxicity

Skin corrosion/irritation

Not classified based on available information.

Ingredients:

Zinc oxide:

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

Ingredients:

Zinc oxide:

Species: Rabbit

DOW CORNING(R) 340 HEAT SINK COMPOUND

Version 2.0

Revision Date: 06/29/2015

SDS Number: 953200-00002

Date of last issue: 02/09/2015 Date of first issue: 02/09/2015

Odor

: none

Odor Threshold

: No data available

pН

: Not applicable

Melting point/freezing point

: No data available

Initial boiling point and boiling

range

: Not applicable

Flash point

: Not applicable

Evaporation rate

: Not applicable

Flammability (solid, gas)

: Not classified as a flammability hazard

Upper explosion limit

: No data available

Lower explosion limit

: No data available

Vapor pressure

: Not applicable

Relative vapor density

: No data available

Relative density

: 2.0

Solubility(ies)

Water solubility

: No data available

Partition coefficient: n-

octanol/water

: No data available

Autoignition temperature

: No data available

Decomposition temperature

: No data available

Viscosity

Viscosity, dynamic

: Not applicable

Explosive properties

: Not explosive

Oxidizing properties

: The substance or mixture is not classified as oxidizing.

Molecular weight

: No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity

: Not classified as a reactivity hazard.

DOW CORNING(R) 340 HEAT SINK COMPOUND



Version 2.0

Revision Date:

06/29/2015

SDS Number: 953200-00002 Date of last issue: 02/09/2015

Date of first issue: 02/09/2015

	TWA (Fumes)	5 mg/m3	NIOSH REL
9	ST (Fumes)	10 mg/m3	NIOSH REL
	C (Dust)	15 mg/m3	NIOSH REL
	TWA (total dust)	15 mg/m3	OSHA Z-1
	TWA (respirable fraction)	5 mg/m3	OSHA Z-1
**,	TWA (Fumes)	5 mg/m3	OSHA Z-1

Engineering measures

: Processing may form hazardous compounds (see section

10).

Ensure adequate ventilation, especially in confined areas.

Minimize workplace exposure concentrations.

Personal protective equipment

Respiratory protection

: General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide

Hand protection

Remarks

: Wash hands before breaks and at the end of workday.

Eye protection

Wear the following personal protective equipment:

Safety glasses

adequate protection.

Skin and body protection

: Skin should be washed after contact.

Hygiene measures

Ensure that eye flushing systems and safety showers are

located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may re-

quire added precautions.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

: paste

Color

: white

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Version 2.0

Revision Date: 06/29/2015

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Environmental precautions

Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Retain and dispose of contaminated wash water.

Local authorities should be advised if significant spillages

cannot be contained.

Methods and materials for containment and cleaning up

: Soak up with inert absorbent material.

For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absor-

bent.

Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to deter-

mine which regulations are applicable.

Sections 13 and 15 of this SDS provide information regarding

certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

Technical measures

: See Engineering measures under EXPOSURE

CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation

: Use only with adequate ventilation.

Advice on safe handling

: Handle in accordance with good industrial hygiene and safety

practice.

Take care to prevent spills, waste and minimize release to the

environment.

Conditions for safe storage

: Keep in properly labeled containers.

Store in accordance with the particular national regulations.

Materials to avoid

: Do not store with the following product types:

Strong oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Zinc oxide	1314-13-2	TWA (Res- pirable frac- tion)	2 mg/m3	ACGIH
		STEL (Res- pirable frac- tion)	10 mg/m3	ACGIH
		TWA (Dust)	5 mg/m3	NIOSH REL

DOW CORNING(R) 340 HEAT SINK COMPOUND



Version 2.0

Revision Date:

SDS Number:

Date of last issue: 02/09/2015

06/29/2015

953200-00002

Date of first issue: 02/09/2015

In case of eye contact

: Flush eyes with water as a precaution.

Get medical attention if irritation develops and persists.

If swallowed

: If swallowed, DO NOT induce vomiting. Get medical attention if symptoms occur.

Rinse mouth thoroughly with water.

Most important symptoms and effects, both acute and

delayed

: None known.

Protection of first-aiders

: No special precautions are necessary for first aid responders.

Notes to physician

: Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

: Water spray

Alcohol-resistant foam Carbon dioxide (CO2)

Dry chemical

Unsuitable extinguishing

media

: None known.

Specific hazards during fire

fighting

: Exposure to combustion products may be a hazard to health.

Hazardous combustion prod-

ucts

Metal oxides Carbon oxides Silicon oxides Formaldehyde

Specific extinguishing meth-

ods

: Use extinguishing measures that are appropriate to local cir-

cumstances and the surrounding environment.

Use water spray to cool unopened containers.

Remove undamaged containers from fire area if it is safe to do

50.

Evacuate area.

Special protective equipment

for fire-fighters

: Wear self-contained breathing apparatus for firefighting if nec-

essarv

Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions, protect : Follow safe handling advice and personal protective eqψip-

ment recommendations.

Description:	C34050Z — 28765	
DOW CORNING : Received #: P801614100	Hecoher La	
Lot #: 0008556913	04/22/16 16:15	Received By: jW65

DOW CORNING(R) 340 HEAT SINK COMPOUND



Version 2.0

Revision Date:

06/29/2015

SDS Number: 953200-00002

ber:

Date of last issue: 02/09/2015

Date of first issue: 02/09/2015

SECTION 1. IDENTIFICATION

Product name

: DOW CORNING(R) 340 HEAT SINK COMPOUND

Product code

: 00000000001015443

Manufacturer or supplier's details

Company name of supplier

: Dow Corning Corporation

Address

South Saginaw Road

Midland Michigan 48686

Telephone

(989) 496-6000

Emergency telephone

24 Hour Emergency Telephone: (989) 496-5900

CHEMTREC: (800) 424-9300

Recommended use of the chemical and restrictions on use

Recommended use

: Heat transfer agents

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Not a hazardous substance or mixture.

GHS Label element

Not a hazardous substance or mixture.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture

: Mixture

Chemical nature

: Silicone compound

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
Zinc oxide	1314-13-2	>= 50 - < 70

SECTION 4. FIRST AID MEASURES

If inhaled

: If inhaled, remove to fresh air.

Get medical attention if symptoms occur.

In case of skin contact

: Wash with water and soap as a precaution.

Get medical attention if symptoms occur.