

DOW CORNING CORPORATION
Material Safety Data Sheet

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Version: 1.6

Revision Date: 2011/02/22

DOW CORNING(R) 5 COMPOUND**1. PRODUCT AND COMPANY IDENTIFICATION**

Dow Corning Corporation
South Saginaw Road
Midland, Michigan 48686

24 Hour Emergency Telephone: (989) 496-5900

Customer Service: (989) 496-6000

Product Disposal Information: (989) 496-6315

CHEMTREC: (800) 424-9300

MSDS No.: 01001400

Revision Date: 2011/02/22

Generic Description: Silicone compound

Physical Form: Grease

Color: Translucent white

Odor: Odorless

NFPA Profile: Health 0 Flammability 1 Instability/Reactivity 0

Note: NFPA = National Fire Protection Association

2. HAZARDS IDENTIFICATION**POTENTIAL HEALTH EFFECTS****Acute Effects**

Eye: Direct contact may cause temporary redness and discomfort.

Skin: No significant irritation expected from a single short-term exposure.

Inhalation: No significant effects expected from a single short-term exposure.

Oral: Low ingestion hazard in normal use.

Prolonged/Repeated Exposure Effects

Skin: No known applicable information.

Inhalation: No known applicable information.

Oral: No known applicable information.

Signs and Symptoms of Overexposure

No known applicable information.

Medical Conditions Aggravated by Exposure

No known applicable information.

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The above listed potential effects of overexposure are based on actual data, results of studies performed upon similar compositions, component data and/or expert review of the product. Please refer to Section 11 for the detailed toxicology information.

3. COMPOSITION/INFORMATION ON INGREDIENTS

None present. This is not a hazardous material as defined in the OSHA Hazard Communication Standard.

4. FIRST AID MEASURES

Eye:	If irritation occurs, flush eye(s) with lukewarm gently flowing water for 5 minutes. Obtain medical attention.
Skin:	No health effects expected. If irritation does occur flush with lukewarm, gently flowing water for 5 minutes. If irritation persists, obtain medical advice.
Inhalation:	If symptoms are experienced remove source of contamination or move victim to fresh air. If irritation persists, obtain medical advice.
Oral:	If irritation or discomfort occur, obtain medical advice.
Notes to Physician:	Treat according to person's condition and specifics of exposure.

5. FIRE FIGHTING MEASURES

Flash Point:	> 214 °F / > 101.1 °C (Closed Cup)
Autoignition Temperature:	Not determined.
Flammability Limits in Air:	Not determined.
Extinguishing Media:	On large fires use dry chemical, foam or water spray. On small fires use carbon dioxide (CO2), dry chemical or water spray. Water can be used to cool fire exposed containers.
Fire Fighting Measures:	Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool.
Unusual Fire Hazards:	None.

6. ACCIDENTAL RELEASE MEASURES

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Containment/Clean up: Observe all personal protection equipment recommendations described in Sections 5 and 8. Wipe up or scrape up and contain for salvage or disposal. Clean area as appropriate since spilled materials, even in small quantities, may present a slip hazard. Final cleaning may require use of steam, solvents or detergents. Dispose of saturated absorbant or cleaning materials appropriately, since spontaneous heating may occur. Local, state and federal laws and 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 determine which federal, state and local laws and regulations are applicable. Sections 13 and 15 of this MSDS provide information regarding certain federal and state requirements.

Note: See Section 8 for Personal Protective Equipment for Spills. Call (989) 496-5900, if additional information is required.

7. HANDLING AND STORAGE

Use with adequate ventilation. Traces of benzene (carcinogen) may form if heated in air above 300°F (149°C). Provide ventilation to control vapor exposure within inhalation guidelines when handling at elevated temperatures. Review the OSHA benzene regulation for detailed information on safe handling requirements. Avoid eye contact.

Use reasonable care and store away from oxidizing materials.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**Component Exposure Limits**

There are no components with workplace exposure limits.

Engineering Controls

Local Ventilation: None should be needed.
General Ventilation: Recommended.

Personal Protective Equipment for Routine Handling

Eyes: Use proper protection - safety glasses as a minimum.
Skin: Washing at mealtime and end of shift is adequate.
Suitable Gloves: Handle in accordance with good industrial hygiene and safety practices.
Inhalation: No respiratory protection should be needed.
Suitable Respirator: None should be needed.

Personal Protective Equipment for Spills

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Eyes:	Use proper protection - safety glasses as a minimum.
Skin:	Washing at mealtime and end of shift is adequate.
Inhalation/Suitable Respirator:	No respiratory protection should be needed.
Precautionary Measures:	Avoid eye contact. Use reasonable care.
Comments:	Traces of benzene (carcinogen) may form if heated in air above 300°F (149°C). Provide ventilation to control vapor exposure within inhalation guidelines when handling at elevated temperatures. Review the OSHA benzene regulation for detailed information on safe handling requirements.

Note: These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form:	Grease
Color:	Translucent white
Odor:	Odorless
Specific Gravity @ 25°C:	1
Viscosity:	Not determined.
Freezing/Melting Point:	Not determined.
Boiling Point:	Not determined.
Vapor Pressure @ 25°C:	Not determined.
Vapor Density:	Not determined.
Solubility in Water:	Not determined.
pH:	Not determined.
Volatile Content:	Not determined.
Flash Point:	> 214 °F / > 101.1 °C (Closed Cup)
Autoignition Temperature:	Not determined.
Flammability Limits in Air:	Not determined.

Note: The above information is not intended for use in preparing product specifications. Contact Dow Corning before writing specifications.

10. STABILITY AND REACTIVITY

Chemical Stability:	Stable.
Hazardous Polymerization:	Hazardous polymerization will not occur.
Conditions to Avoid:	None.
Materials to Avoid:	Oxidizing material can cause a reaction.

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Hazardous Decomposition Products

Thermal breakdown of this product during fire or very high heat conditions may evolve the following decomposition products: Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide. Formaldehyde.

11. TOXICOLOGICAL INFORMATIONSpecial Hazard Information on Components

No known applicable information.

12. ECOLOGICAL INFORMATIONEnvironmental Fate and Distribution

Complete information is not yet available.

Environmental Effects

Complete information is not yet available.

Fate and Effects in Waste Water Treatment Plants

Complete information is not yet available.

Ecotoxicity Classification Criteria

Hazard Parameters (LC50 or EC50)	High	Medium	Low
Acute Aquatic Toxicity (mg/L)	<=1	>1 and <=100	>100
Acute Terrestrial Toxicity	<=100	>100 and <= 2000	>2000

This table is adapted from "Environmental Toxicology and Risk Assessment", ASTM STP 1179, p.34, 1993.

This table can be used to classify the ecotoxicity of this product when ecotoxicity data is listed above. Please read the other information presented in the section concerning the overall ecological safety of this material.

13. DISPOSAL CONSIDERATIONSRCRA Hazard Class (40 CFR 261)

When a decision is made to discard this material, as received, is it classified as a hazardous waste? No

State or local laws may impose additional regulatory requirements regarding disposal. Call (989) 496-6315, if additional information is required.

14. TRANSPORT INFORMATION

DOW CORNING(R) 5 COMPOUND**DOT Road Shipment Information (49 CFR 172.101)**

Not subject to DOT.

Ocean Shipment (IMDG)

Not subject to IMDG code.

Air Shipment (IATA)

Not subject to IATA regulations.

Call Dow Corning Transportation, (989) 496-8577, if additional information is required.

15. REGULATORY INFORMATION

Contents of this MSDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA Status: All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

EPA SARA Title III Chemical Listings**Section 302 Extremely Hazardous Substances (40 CFR 355):**

None.

Section 304 CERCLA Hazardous Substances (40 CFR 302):

None.

Section 311/312 Hazard Class (40 CFR 370):

Acute: No
Chronic: No
Fire: No
Pressure: No
Reactive: No

Section 313 Toxic Chemicals (40 CFR 372):

None present or none present in regulated quantities.

Note: Chemicals are listed under the 313 Toxic Chemicals section only if they meet or exceed a reporting threshold.

Supplemental State Compliance Information**California**

Warning: This product contains the following chemical(s) listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as being known to cause cancer, birth defects or other

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reproductive harm.

None known.

Massachusetts

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
7631-86-9	7.0 - 13.0	Silica, amorphous

New Jersey

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
63148-52-7	70.0 - 90.0	Dimethyl, phenylmethyl siloxane, trimethyl-terminated
7631-86-9	7.0 - 13.0	Silica, amorphous
70131-67-8	5.0 - 10.0	Dimethyl siloxane, hydroxy-terminated

Pennsylvania

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
63148-52-7	70.0 - 90.0	Dimethyl, phenylmethyl siloxane, trimethyl-terminated
7631-86-9	7.0 - 13.0	Silica, amorphous
70131-67-8	5.0 - 10.0	Dimethyl siloxane, hydroxy-terminated

16. OTHER INFORMATION

Prepared by: Dow Corning Corporation

These data are offered in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

(R) indicates Registered Trademark

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 08/13/2006

Reviewed on 08/13/2006

1 Identification of substance**Product details****Trade name:** R244 Sn55Pb45, Sn60Pb40, Sn62Pb38, Sn63Pb37

Application of the substance / the preparation: Solder paste

Manufacturer/Supplier:Kester
515 E. Touhy Ave.
Des Plaines, IL 60018

Tel.(847) 297-1600

Fax.(847) 390-9338

Information department:

MSDS Coordinator

Tel. (847) 699-5755

Emergency information:

CHEMTREC 24-Hour Emergency Telephone Number:

(800)424-9300

CHEMTREC 24-Hour Emergency Telephone Number (Outside of the U.S. and Canada):

(703)527-3887

2 Composition/Data on components**Chemical characterization****Description:** Mixture of the substances listed below with nonhazardous additions.**Dangerous components:**

7440-31-5	tin	50-100%
7439-92-1	lead	25-50%
65997-06-0	Modified Rosin	2.5-10%
112-73-2	bis(2-butoxyethyl) ether	≤ 2.5%

Additional information: Solder powder is typically 85-92% of the solder paste composition.**3 Hazards identification****WHMIS Hazard Symbols****Information pertaining to particular dangers for man and environment:**

The product has to be labelled due to the calculation procedure of international guidelines.

Harmful by inhalation and if swallowed.

Danger of cumulative effects.

May cause sensitisation by inhalation and skin contact.

Possible risk of impaired fertility.

Contains lead. Should not be used on surfaces liable to be chewed or sucked by children.

NFPA ratings (scale 0 - 4)

Health = 2

Fire = 1

Reactivity = 0

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HMIS-ratings (scale 0 - 4)

HEALTH	2
FIRE	1
REACTIVITY	0

*Health = *2**Fire = 1**Reactivity = 0***4 First aid measures****General information:***Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.***After inhalation:** *Supply fresh air; consult doctor in case of complaints.***After skin contact:** *Immediately wash with water and soap and rinse thoroughly.***After eye contact:** *Rinse opened eye for several minutes under running water.***After swallowing:** *Induce vomiting, if person is conscious. Seek medical help.***5 Fire fighting measures****Suitable extinguishing agents:***CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.***Special hazards caused by the material, its products of combustion or resulting gases:***In case of fire, the following can be released:**Carbon monoxide (CO)**Carbon dioxide (CO₂)**Melted solder above 1000°F will liberate toxic lead and/or antimony fumes.**Aliphatic aldehydes***Protective equipment:***Mouth respiratory protective device.**Wear self-contained respiratory protective device.***6 Accidental release measures****Person-related safety precautions:** *Ensure adequate ventilation***Measures for environmental protection:** *Do not allow product to reach sewage system or any water course.***Measures for cleaning/collecting:***Ensure adequate ventilation.**Scoop up paste and deposit in appropriate containers.***7 Handling and storage****Handling:****Information for safe handling:***Wash hands after handling paste and before eating or smoking. Care should be taken to remove paste from under fingernails.***Information about protection against explosions and fires:** *Keep respiratory protective device available.*

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Storage:**Requirements to be met by storerooms and receptacles:** Store at or near 5°C in a dry location.**Information about storage in one common storage facility:** Not required.**Further information about storage conditions:** Keep receptacle tightly sealed.

8 Exposure controls and personal protection

Additional information about design of technical systems: No further data; see item 7.**Components with limit values that require monitoring at the workplace:****7440-31-5 tin**PEL 2 mg/m³

Metal

REL 2 mg/m³

Tin, Metal

TLV 2 mg/m³**7439-92-1 lead**PEL 0.05* mg/m³

as Pb

REL <0.1* mg/m³

as Pb; *Blood Pb <0.06 mg/100 g whole blood

TLV 0.05 mg/m³

as Pb; BEI

Additional information:

PEL = Permissible Exposure Limit (OSHA)

REL = Recommended Exposure Limit (NIOSH)

TLV = Threshold Limit Value (ACGIH)

OSHA = Occupational Safety and Health Administration

ACGIH = American Conference of Governmental Industrial Hygienists

NIOSH = National Institute for Occupational Safety and Health

Personal protective equipment:**General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Breathing equipment:

When ventilation is not sufficient to remove fumes from the breathing zone, a safety approved respirator or self-contained breathing apparatus should be worn.

Protection of hands:

Protective gloves

Material of gloves:

Nitrile rubber, NBR

Natural rubber, NR

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Penetration time of glove material:

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:

Safety glasses



Tightly sealed goggles

9 Physical and chemical properties

General Information

Form: *Pasty*
Color: *Silver grey*
Odor: *Characteristic*

Change in condition

Melting point/Melting range: *Undetermined.*

Boiling point/Boiling range: *Undetermined.*

Flash point: *>93°C (>199°F)*

Auto igniting: *Product is not selfigniting.*

Danger of explosion: *Product does not present an explosion hazard.*

Density at 20°C (68°F): *>4.5 g/cm³*

Solubility in / Miscibility with

Water: *Not miscible or difficult to mix.*

10 Stability and reactivity

Thermal decomposition / conditions to be avoided: *No decomposition if used according to specifications.*

Materials to be avoided: *Strong acids, strong oxidizers.*

Dangerous reactions *No dangerous reactions known.*

Dangerous products of decomposition:

When heated to soldering temperatures, the solvents are evaporated and rosin may be thermally degraded to liberate aliphatic aldehydes and acids.

Carbon monoxide and carbon dioxide

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11 Toxicological information

Acute toxicity:

LD/LC50 values that are relevant for classification:

65997-06-0 Modified Rosin

Oral	LD50	> 4.000 mg/kg (Rat)
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112-73-2 bis(2-butoxyethyl) ether

Oral	LD50	3900 mg/kg (rat)
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Primary irritant effect:

on the skin: Possible local irritation by contact with flux or fumes.

on the eye: Smoke during soldering can cause eye irritation.

through inhalation:

Flux fumes during soldering may cause irritation and damage of mucous membranes and respiratory system.

through ingestion: May be harmful if swallowed.

Sensitization:

Sensitization possible through inhalation.

Sensitization possible through skin contact.

Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

Irritant

12 Ecological information

General notes: Do not allow product to reach ground water, water course or sewage system.

13 Disposal considerations

Product:

Recommendation:

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Disposal must be made according to official regulations.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

14 Transport information

DOT regulations:

Hazard class: -
Not regulated.

Land transport ADR/RID (cross-border):

ADR/RID class: -
Not regulated.

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Maritime transport IMDG:**IMDG Class:** -
Not regulated.**Marine pollutant:** No**Air transport ICAO-TI and IATA-DGR:****ICAO/IATA Class:** -
Not regulated.**15 Regulations***USA The following information relates to product regulation specific to the USA.***SARA (Superfund Amendments and Reauthorization Act)***Section 355 (extremely hazardous substances):**None of the ingredient is listed.**Section 313 (Specific toxic chemical listings):*

7439-92-1 | lead

112-73-2 | bis(2-butoxyethyl) ether

TSCA (Toxic Substances Control Act):*All ingredients are listed.***California Proposition 65***Chemicals known to cause cancer:**WARNING: This product contains a chemical known to the State of California to cause cancer.**Chemicals known to cause reproductive toxicity:**WARNING: This product contains a chemical known to the State of California to cause birth defects and/or other reproductive harm.***Carcinogenicity categories***EPA (Environmental Protection Agency)*

7439-92-1 | lead

B2

IARC (International Agency for Research on Cancer)

7439-92-1 | lead

2B

*NTP (National Toxicology Program)**None of the ingredients is listed.**TLV (Threshold Limit Value established by ACGIH)**None of the ingredients is listed.**NIOSH-Ca (National Institute for Occupational Safety and Health)**None of the ingredients is listed.**OSHA-Ca (Occupational Safety & Health Administration)**None of the ingredients is listed.**CANADA: The following information relates to product regulation specific to Canada.*

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Workplace Hazardous Materials Identification (WHMIS):

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulation (CPR) and the MSDS contains all of the information required by the CPR.

EUROPEAN UNION

The following information relates to product regulation specific to the directives of the European Union.

Risk phrases:

Harmful by inhalation and if swallowed.

Danger of cumulative effects.

May cause sensitisation by inhalation and skin contact.

Possible risk of impaired fertility.

Safety phrases:

Avoid exposure - obtain special instructions before use.

Keep locked up and out of the reach of children.

Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).

Avoid contact with skin.

Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.

Wear suitable gloves and eye/face protection.

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

In case of accident by inhalation: remove casualty to fresh air and keep at rest.

Special labeling of certain preparations:

Contains lead. Should not be used on surfaces liable to be chewed or sucked by children.

16 Other information

The information contained herein is based on data considered accurate and is offered solely for information, consideration and investigation. Kester extends no warranties, makes no representations and assumes no responsibility as to the accuracy, completeness or suitability of this data for any purchaser's use. The data on this Material Safety Data Sheet relates only to this product and does not relate to use with any other material or in any process. All chemical products should be used only by, or under the direction of, technically qualified personnel who are aware of the hazards involved and the necessity for reasonable care in handling. Hazard communication regulations require that employees must be trained on how to use a Material Safety Data Sheet as a source for hazard information.

Department issuing MSDS: Product Safety

USA