



product specification

Customer name	
Product	Thermal grease
Designed for	
Part no.	AK-460
Issue date	2011/01/27
Spec No.	
Version	V1.0

Customer Approved By	Check	Inspect	Design

鍊立康科技股份有限公司

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Dow Corning Taiwan Incorporated
Material Safety Data Sheet

DOW CORNING(R) TC-5021 THERMALLY CONDUCTIVE COMPOUND

1. IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY

1.1 Product Name:	DOW CORNING(R) TC-5021 THERMALLY CONDUCTIVE COMPOUND		
1.2 Product Code:	04046655		
1.3 Chemical Classification:	Silicone compound		
1.4 Company Details			
Manufacturer/Supplier:	Dow Corning Taiwan Inc.		
Address:	No. 21, Chi-Lin Road, Chungli Industrial Park, Chungli, Taiwan, R.O.C.		
Telephone Number:	886-3-4620534	Fax Number:	886-3-4620552
Emergency Telephone Number:	886-3-4620534 or 886-920-916715		
Contact Person:	Environment, Health, and Safety Manager		

2. COMPOSITION / INFORMATION ON INGREDIENTS

2.1 Chemical characterization: Mixture

2.2 Hazardous Ingredients:

<u>Chemical Name</u>	<u>CAS No.</u>	<u>% (w/w)</u>	<u>Hazard Classification</u>
No hazardous ingredients.			

3. HAZARDS IDENTIFICATION

3.1 Most Important Hazards

Adverse Health Effects: Not hazardous.

Environmental Effects: Not applicable.

Physical and Chemical Effects: Not applicable.

Specific Hazards: Can react with strong oxidising agents. Water, alcohols, acidic or basic materials, and many metals or metallic compounds, when in contact with product, liberate flammable hydrogen gas, which can form explosive mixtures in air.

3.2 Signs and Symptoms of Overexposure: No significant adverse effects from a single exposure expected from normal use.

3.3 Overall Hazard Classification Not classified to be a dangerous material

4. FIRST AID MEASURES

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4.1 First Aid Measures

Eyes:	Immediately flush with water for 15 minutes.
Skin:	No first aid should be needed.
Inhalation:	No first aid should be needed.
Oral:	Get medical attention.
Comments:	Treat according to person's condition and specifics of exposure.

4.2 Signs and Symptoms of Overexposure: No significant adverse effects from a single exposure expected from normal use.

4.3 Personal protection for first aid or rescue personnel who have to enter the workplace in which a major spill has occurred

Respiratory protection:	No respiratory protection should be needed.
Eye protection:	Use proper protection - safety glasses as a minimum.
Hand protection:	No special protection needed.

4.4 Note to physicians: Treat symptomatically. For further information, the medical practitioner should contact Dow Corning Taiwan Co. Ltd.

5. FIRE FIGHTING MEASURES

5.1 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.

5.2 Specific Hazards: None.

5.3 Special Fire Fighting Procedures: Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool.

5.4 Special protective equipment for the Fire Fighters: Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions: Avoid eye contact. Do not take internally.

6.2 Environmental Precautions: Prevent from spreading or entering into drains, ditches or rivers by using sand, earth or other appropriate barriers.

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6.3 Methods for Cleaning up: Observe all personal protective equipment recommendations described in this MSDS. If diked material can be pumped, store recovered material in appropriate container. Wipe up or scrape up and contain for salvage or disposal. Materials in contact with water, moisture, acids or bases have the potential to generate hydrogen gas. Recovered material should be stored in a vented container. 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. 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 laws and regulations are applicable.

7. HANDLING AND STORAGE

- 7.1 Handling Precautions:** Use with adequate ventilation. Avoid eye contact. Do not take internally. Exercise good industrial hygiene practice. Wash after handling, especially before eating, drinking or smoking.
- 7.2 Storage Conditions:** Product may evolve minute quantities of flammable hydrogen gas which can accumulate. Adequately ventilate to maintain vapors well below flammability limits and exposure guidelines. Do not repackage. Do not repackage to glass containers which may shatter due to pressure build up. Clogged container vents may increase pressure build up. Keep container closed and store away from water or moisture.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Industrial Hygiene Standards:

<u>Ingredients</u>	<u>CAS No.</u>	<u>Exposure Limits</u>
None known.		

8.2 Engineering Controls

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

8.3 Personal Protective Equipment for Routine Handling

Respiratory protection: No respiratory protection should be needed.
Suitable Respirator: None should be needed.
Eye protection: Use proper protection - safety glasses as a minimum.
Hand protection: No special protection needed.
Skin protection: Washing at mealtime and end of shift is adequate.

8.4 Personal Protective Equipment for Spills

Respiratory protection: No respiratory protection should be needed.
Eye protection: Use proper protection - safety glasses as a minimum.

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Skin protection: Washing at mealtime and end of shift is adequate.

8.5 Hygiene Measures: Exercise good industrial hygiene practice. Wash after handling, especially before eating, drinking or smoking.

8.6 Precautionary Measures: Avoid eye contact. Do not take internally. Use reasonable care.

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

9.1 Physical Form: Grease

9.2 Color: Gray

9.3 Odor: Slight odor

9.4 pH: Not determined.

9.5 Water Solubility: Not determined.

9.6 Boiling point/range: Not determined.

9.7 Decomposition Temperature : Not determined.

9.8 Flash Point: Not applicable.

9.9 Autoignition temperature: Not determined.

9.10 Explosive properties: No

9.11 Vapor Pressure @ 25°C: Not determined.

9.12 Vapour Density (air=1): Not determined.

9.13 Specific Gravity: 3.4

9.14 Upper Flammability Limit: Not determined.

9.15 Lower Flammability Limit: Not determined.

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

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10. STABILITY AND REACTIVITY

- 10.1 Stability:** Stable.
- 10.2 Materials to Avoid:** Can react with strong oxidising agents. Water, alcohols, acidic or basic materials, and many metals or metallic compounds, when in contact with product, liberate flammable hydrogen gas, which can form explosive mixtures in air.
- 10.3 Conditions to Avoid:** None.
- 10.4 Hazardous Decomposition Products:** Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide. Metal oxides. Formaldehyde. Hydrogen.

11. TOXICOLOGICAL INFORMATION

11.1 Acute Toxicity

<u>Chemical Name</u>	<u>CAS No.</u>	<u>LD50 (Oral)</u>	<u>LC50 (Inhalation)</u>
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No hazardous ingredients.

Eyes: Direct contact may cause mild irritation.
Skin: No significant irritation expected from a single short-term exposure.
Ingestion: Low ingestion hazard in normal use.
Inhalation: No significant effects expected from a single short-term exposure.

11.2 Chronic Toxicity

Skin: Repeated or prolonged exposure may cause irritation.
Ingestion: Repeated ingestion or swallowing large amounts may injure internally.
Inhalation: No known applicable information.

11.3 Sensitizing Effects: None known.

11.4 Other Health Hazard Information: Inhalation of fumes may result in metal fume fever, a flu-like illness with symptoms of metallic taste, fever and chills, aches, chest tightness, and cough.

The above listed potential effects of overexposure are based on actual data, the results of studies performed upon similar compositions, component data, and/or expert review of the products.

12. ECOLOGICAL INFORMATION

12.1 Environmental Fate and Distribution:

Solid material, insoluble in water.

12.2 Environmental Effects:

Very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment.

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However, due to the physical form and water-insolubility of the product the bioavailability is negligible.

12.3 Fate and Effects in Waste Water Treatment Plants:

No adverse effects on bacteria are predicted.

13. DISPOSAL CONSIDERATIONS

13.1 Product Disposal: This material must be disposed of as hazardous waste.

13.2 Packaging Disposal: Dispose of in accordance with local regulations.

14. TRANSPORT INFORMATION

14.1 International Transport Regulations

DOT Road Shipment Information (49 CFR 172.101):

Not subject to DOT.

Sea Transport (IMDG):

Not subject to IMDG code.

Air Transport (IATA):

Not subject to IATA regulations.

14.2 National Transport Regulations : Rules for Transport by Road, No. 84
National Maritime Dangerous Goods Rules
National code for the Transport of Dangerous Goods by Rail

14.3 Special Requirements and Additional Information : Not available.

15. REGULATORY INFORMATION

Applicable Laws: Rules on Workers Health and Safety Facilities.
Rules on Hazard Communication of Dangerous Materials and Toxic Materials.
Rules for Transport by Road.
Standards for the Storage, Cleanup, Handling and Disposal of Industrial Waste.

16. OTHER INFORMATION

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- 16.1 Literature References:** Thomson MICROMEDEX, Ariel WebInsight, Internal Technical Data and others
- 16.2 MSDS Provider**
- Name:** Dow Corning Taiwan Inc.
- Address:** No. 21, Chi-Lin Road, Chungli Industrial Park, Chungli, Taiwan, R.O.C.
- Telephone Number:** 886-3-4620534
- 16.3 Contact Person:** Environment, Health, and Safety Manager
- 16.4 Date of Issue:** 2004/03/17

This information is offered in good faith as typical values and not as a product specification. No warranty, 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.

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