MSDS No. 715

Material Safety Data Sheet

Si-COAT® 580™

Low VOC Anti-Corrosion Protective Coating

csl silicones inc.

Reviewed 13-06-12

1 Product & Company Identification

Product Name	Si-COAT® 580™ | Low VOC Anti-Corrosion Protective Coating
Chemical Name	Not applicable
Chemical Formula	Polysiloxane coating
Molecular Weight	Polymer
Material Uses	Coating for protection against corrosion in above-grade applications.
Manufacturer	CSL Silicones Inc. 144 Woodlawn Road West, Guelph, ON, N1H 1B5 Canada
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2 Hazards Identification

A. HAZARDOUS INGREDIENTS OF MATERIAL

Petroleum Naphtha (flammable substance) is released into the air during drying and curing process. Remove sources of ignition.

Methyl Ethyl Ketoxime (MEKO) is a curing by-product that is released when the coating comes in contact with humid air. It is recommended to provide adequate ventilation to keep concentration below 3 ppm. TWA: 3 ppm; STEL: 10 ppm; Workplace Environmental Exposure Level AIHA: 10 ppm

B. EFFECTS OF CHRONIC EXPOSURE

Health Effects	Pulmonary Edema, Dermatitis
Toxicological Data	LD50 of mixture: 4,400 to 16,700 mg/kg (calculated, oral, rat)
Carcinogenicity Data	Respirable Crystalline Silica has been classified as a probable carcinogen by the International Agency for Research on Cancer (IARC) and the National Institute for Occupational Health and Safety (NIOSH). Neither the base compound nor the cured coating releases ant respirable quartz.
Reproductive Data	Octamethylcyclotetrasiloxane (in concentration of 500 to 700 ppm) has shown reproductive effects in laboratory animals. No available information of adverse reproductive effects of other ingredients of this product.
Mutagenicity Data	No information is available and no adverse mutagenic effects are anticipated
Teratogenicity Data	No information is available and no adverse teratogenic effects are anticipated
Synergistic Products	None known

Delayed Effects	Curing byproduct methylethylketoxime (MEKO); In a chronic oral toxicity animal study, MEKO produced an adverse effect upon red blood cells. This was found for all dose levels tested. Gross histopathologic alterations were observed in the spleen, lung and kidney. In an acute dermal animal study, 200 mg/kg caused mild hematological (blood) effects. No effects were seen at 20 mg/kg. Male rats and mice exposed to MEKO throughout their lifetime developed liver tumors. Many commonly used chemicals cause liver tumors in rats and mice. The relevance to humans is uncertain.

C. EFFECTS OF ACUTE EXPOSURE

Inhalation	Not normally an inhalation hazard. At high vapor concentrations curing by-product has a narcotic action with reversible effects.
Eye Contact	*Liquid* acts as severe irritant upon contact; may cause corneal burns and conjunctivitis. *Vapor* acts as an irritant; may cause corneal damage and photophobia (light sensitivity).
Dermal (skin) Contact	Mild irritant; may cause transient reddening of the skin.
Ingestion (swallowing)	Ingestion can cause headache, nausea, dizziness, anesthesia, depression of the central nervous system and a burning sensation. Low oral toxicity.

D. HAZARD SYMBOLS

Harmful if Swallowed

3 Composition / Information on Ingredients

Ingredient	*Wt. Pct. (%)*	*CAS No.*	*ACGIH TLV*	*R Phrases* *	*LD50*
Amorphous Silica	1 – 5	067762-90-7	10 mg/m³		> 5,000 mg/kg (oral, rat)
Oximino Silane	1 – 5	022984-54-9	Not established	R36, R38, R43	2 – 3 mL/kg (oral, rat)
Amino Alkyl Silane	1 – 5	919-30-2	Not established	R36, R37, R48	Not established
Crystalline Quartz	0 – 40	14808-60-7	0.025 mg/m³	R40/20, R48/20	Not established
Octamethylcycl-otetrasiloxane	0.1 – 2	000556-67-2	10 ppm	R36, R37, R53	2,000 mg/kg (oral, rat) 36 mg/L (inhale, rat, 4 hours)

** See Section 15 for explanation of Risk (R) Phrases*

4 First Aid Measures

Inhalation	If inhaled, remove to fresh air. If breathing is difficult, give oxygen. Call a physician.
Eye Contact	Do not attempt to physically remove solids or gums from eye. Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 20 minutes, by the clock, holding the eyelid(s) open. Obtain immediate medical attention.
Dermal (skin) Contact	Remove contaminated clothing. Wash gently and thoroughly with water and non-abrasive soap. If symptoms persist, obtain medical attention. Contaminated clothing should be laundered before re-use.
Ingestion	Never give anything by mouth if victim is rapidly losing consciousness, is unconscious or is convulsing. DO NOT INDUCE VOMITING. Have victim drink 240 to 300ml (8 to 10 fl. oz.) of water or milk to dilute material in stomach. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Repeat the administration of water/milk. Obtain immediate medical attention.
First Aid	Provide general supportive measures (comfort, warmth, rest). Consult a physician and/or the nearest Poison Control Center for all exposures except minor instances of inhalation or skin contact. Only a physician should remove solid or plastic material in the eye.

5 Fire Fighting Measures

A. FIRE & EXPLOSION DATA

Flash Point	88°C (190.4°F) PMCC, ASTM D-93
Lower Explosive Limit %	Not applicable
Upper Explosive Limit %	Not applicable
Auto-ignition Temperature	No data
Fire Extinguishing Agents	Dry chemical, CO_2, water spray, chemical foam
Unusual Fire/Explosion Hazard	None
Hazardous Combustion Products	Carbon dioxide, carbon monoxide, formaldehyde, silicon dioxide, nitrogen oxide

B. FIRE FIGHTING PROCEDURES

Wear a Self-Contained Breathing Apparatus (SCBA) that provides eye protection and is NIOSH approved. Shut off fuel supply to fire if possible. Do not use direct water stream as this may spread the fire.

6 Accidental Release Measures

Spill & Leak Procedure	Eliminate sources of ignition. Restrict access to area of spill. Provide ventilation and protective clothing if needed. Cover with dry lime or soda ash. Scrape up liquid coating with cardboard or rag and place in a closed container.
Waste Disposal	Review environmental regulations for disposal. Silicone wastes can often be incinerated in approved facilities. Solid waste may be sent to a designated landfill site.

7 Handling & Storage

Storage Conditions	Store in cool, dry conditions. Keep container tightly sealed. Once opened the product will start to cure.
Handling Procedure	Avoid contact and inhalation. Do not get in eyes or on skin. Wash thoroughly after handling. Cured product requires no special requirements.

8 Exposure Control & Personal Protection

Methylethylketoxime (MEKO) is released as a curing byproduct when in contact with humid air.

A. EXPOSURE LIMIT OF CURING BY-PRODUCT

Component	*OSHA PEL*	*ACGIH TLV*	*Other Limits*
MEKO	None	None	10 ppm (STEL) 10 ppm (TWA)

B. PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection	Not required unless normal ventilation is inadequate
Eye/Face Protection	Chemical splash goggles
Dermal (skin) Protection	Gloves, coveralls and/or aprons may be useful to prevent contamination of skin or clothing
Resistance of Materials for Protective Clothing	Most rubbers and plastics are adequate
Ventilation Requirements	Local exhaust to provide sufficient removal of vapors

9 Physical & Chemical Properties

Physical State	Smooth, slightly viscous liquid
Odor	Hydrocarbon odorless
Odor Threshold	Not applicable
pH	Not determined
Boiling Point	Not available
Freezing Point	Not available
Vapor Pressure (mm Hg)	Negligible at 25˚C (77˚F)
Vapor Density (air = 1)	Not applicable
VOC Concentration	61.8 g/L (0.52 lb/US gallon)
Specific Gravity (water = 1)	1.3
Solubility in Water	Insoluble
Solubility in Other Solvents	Soluble in most organic solvents
Evaporation Rate (butyl acetate = 1)	Not applicable
Decomposition Temperature	No data

10 Stability & Reactivity

Product Stability	Stable
Hazardous Polymerization	Will not occur
Incompatible Materials	STRONG OXIDIZERS. CONCENTRATED ACIDS OR BASES cause degradation of polymer. Boiling water may soften and weaken material.
Hazardous Decomposition Products	Combustion will produce carbon dioxide, carbon monoxide, silicon dioxide and nitrogen oxides. A component of this product can generate formaldehyde at approximately 150˚C (300˚F) and above in the atmosphere containing oxygen. Formaldehyde is a skin and respiratory sensitizer, eye and throat irritant, acute toxicant and potential carcinogen.

11 Toxicological Information

Toxicological Data	LD50 of mixture (calculated) Ingestion in rat 4,400 to 16,700 mg/kg

Octamethylcyclotetrasiloxane (in concentrations of 500 and 700 ppm) has shown evidence of reproductive effects in laboratory animals.

12 Ecological Information

The uncured coating will release methylethylketoxime (MEKO) when in contact with water. MEKO has been determined biodegradable and has a static 96 hours LC_{50} of 48 mg/L (bluegill) and 48 hours EC_{50} of 750 mg/L (daphnia).

13 Disposal Consideration

Not classified as a Hazardous Waste.

Review local environmental regulations for disposal. Silicone wastes can often be incinerated in approved facilities. Solid waste may be sent to a designated landfill site.

14 Transport Information

TDG Information	Not regulated

15 Regulatory Information

Risk Phrases	R22 Harmful if swallowed R36 Irritating to eyes R37 Irritating to respiratory system R38 Irritating to skin R43 May cause sensitization by skin contact R48 Danger of serious damage to health by prolonged exposure R53 May cause long-term adverse effects in the aquatic environment The following Risk Phrases are applicable to quartz powders only and not the coating itself. Particles of quartz powder are completely encapsulated with polymer inside the coating and thus pose no hazard , inhalation or otherwise. R40/20 Limited evidence of carcinogenicity by inhalation R40/20 Harmful; danger of serious damage to health by prolonged exposure through inhalation
Safety Phrases	S23 Do not breath vapors S24/25 Avoid contact with skin and eyes S51 Use in well-ventilated areas
WHMIS Classification	Class D: poisonous and infectious material Division 2: other toxic effects Subdivision A: Very toxic material Class D: poisonous and infectious material Division 2: other toxic effects Subdivision B: toxic
RoHS Statement	Si-COAT 580 Low VOC Anti-Corrosion Protective Coating does not contain Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent Chromium, Polybrominated Biphenyls (PBBs) or Polybrominated Diphenyl Ethers (PBDEs) as listed per the RoHS Directive.
TSCA Status	All ingredients of this product are listed on the TSCA Inventory of Chemicals.
State of California Safe Drinking Water and Toxic Enforcement Act, 1986 (Proposition 65)	None of the ingredients of this product are listed in Proposition 65 as of December, 2006.
Canadian DSL Status	All ingredients of this product are listed on the Canadian DSL.

16 Additional Information & Sources Used

Date Issued	May 01, 2007
Date Revised	Feb 10, 2012
Prepared By	Farooq AHMED, R&D Manager
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REFERENCES

1. American Conference of Governmental Industrial Hygienists Inc., Documentation of the Threshold Limit Values (TLV) and Biological Exposures Indices, 5th Edition, 1986, Cincinnati, OH.
2. National Institute for Occupational Safety and Health, Registry of Toxic Effects of Chemical Substances.
3. Sigma-Aldrich Corp., USA, The Sigma-Aldrich Library of Chemical Safety Data, 1985.
4. Sittig, M., Handbook of Toxic and Hazardous Chemicals and Carcinogens, 2nd Edition, 1985, Park Ridge, NJ.
5. Canadian Center for Occupational Health and Safety, CHEMINFO, Record #15E, #26E.
6. Material Safety Data Sheets from Cabot Corporation, Wacker-Chemie GMBH, General Filtration, Dow Corning, Union Carbide, Hoechst Canada, Honeywell Chemicals.
7. Canada's National Occupational Health & Safety Resources at www.ccohs.ca/oshanswers/legisl/whmis
8. Information from Health Canada at www.hc-sc.gc.ca/ahc-asc/intactiv/ghs-sgh/index_e.html
9. Information from United Nations at www.unece.org/trans/danger/publi/ghs/ghs_rev01/01files_e.html
10. Information about the RoHS (Restriction of Use of Certain Hazardous Substances in Electrical and Electronic Equipments) Directive was obtained at www.rohs.gov.uk
11. Information about the State of California Safe Drinking Water and Toxic Enforcement Act, 1986 (Proposition 65) was obtained at www.oehha.ca.gov/prop65.html

Disclaimer

The information given in this sheet is not intended to be exhaustive and any person using the product for any purpose other than that specifically recommended in this document without first obtaining written confirmation from CSL Silicones Inc. as to the suitability of the product for the intended purpose does so at his/her own risk. The information contained herein has been prepared in good faith to comply with applicable federal and provincial (state) law(s). However, no warranty of any kind is given or implied and CSL Silicones Inc. will not be responsible for any damages, losses or injuries that may result from the use of any information contained herein. While CSL endeavors to ensure all advice it gives about the product (whether in this document or otherwise) is correct, we have no control over either the quality or condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless CSL specifically agrees in writing to do so, it does not accept any liability whatsoever or howsoever arising for the performance of the product, or for any consequential loss or damage arising out of the use of the product. Any warranty, if given or specific Terms & Conditions of Sale are contained in CSL's Terms & Conditions of Sale, a copy of which can be obtained upon request. The information contained herein is liable to modification from time-to-time in light of experience and CSL's policy of continuous product improvement. It is the user's responsibility to check that this document is current prior to using the product.

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