



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name	QM Cat Clear SP
Issue date	7-29-11
Version #	00
CAS #	Mixture
Product use	Moldmaking catalyst
Manufacturer/Supplier	Quantum Silicones 8021 Reycan Road Richmond, VA 23237 philmcdermott@quantumsilicones.com 804-271-9010 Contact Person: Phillip McDermott
Emergency	Chemtrec 800-424-9300

2. Hazards Identification

Physical state	Liquid
Emergency overview	WARNING Combustible liquid and vapor. Will be easily ignited by heat, spark or flames. Causes skin, eye and respiratory tract irritation. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. Prolonged exposure may cause chronic effects.
OSHA regulatory status	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Inhalation. Ingestion.
Eyes	Contact with eyes may cause irritation.
Skin	Causes skin irritation.
Inhalation	Harmful by inhalation. In high concentrations, vapors may be irritating to the respiratory system. In high concentrations, vapors are narcotic and may cause headache, fatigue, dizziness and nausea.
Ingestion	May cause discomfort is swallowed. High concentrations may cause severe lung damage.
Target organs	Blood. Eyes. Kidneys. Liver. Respiratory system. Skin.
Chronic effects	Liver injury may occur. Kidney injury may occur. Frequent of prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Signs and symptoms	Liver enlargement. Edema. Conjunctivitis. Skin irritation. Defatting of the skin.
Potential environmental	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Tetrapropoxy silane	682-01-9	5-15
Ethyl silicate	78-10-4	5-10
Dibutyl Tin bisneodecanoate	68928-76-7	3-7
Dibutyltin dilaurate	77-58-7	0.3-4

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

4. First Aid Measures

First aid procedures

Eye Contact Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyes wide apart.

Skin Contact Remove contaminated clothes and rinse skin thoroughly with water.

Inhalation Move injured person into fresh air and keep person calm under observation. Get medical attention immediately.

Ingestion Rinse mouth thoroughly with water and give large amounts of milk or water, if person is conscious.

Notes to physician In case of shortness of breath, give oxygen. Treat symptomatically.

General advice In case of shortness of breath, give oxygen. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. First aid personnel must be aware of own risk during rescue.

5. Fire Fighting Measures

Flammable properties Heat may cause the containers to explode. The product is combustible, and heating may generate vapors which may form explosive vapor/air mixtures.

Extinguishing media

Suitable extinguishing media Extinguish with foam, carbon dioxide, dry powder or water fog.

Unsuitable extinguishing media None

Protection of firefighters

Specific hazards arising from the chemical During fire, gases hazardous to health may be formed. Solvent vapors may form explosive mixtures with air.

Protective equipment and precautions for firefighters Use standard firefighting procedures and consider the hazards of other involved materials. Containers close to fire should be removed or cooled with water.

Fire fighting equipment/instructions

Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials. Containers close to fire should be removed or cooled with water.

Hazardous combustion Products

Carbon monoxide and carbon dioxide.

6. Accidental Release Measures

Personal Precautions Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate the area. Avoid inhalation of vapors/spray and contact with skin and eyes. Wear suitable protective clothing. See Section 8 of the MSDS for Personal Protective Equipment.

Environmental precautions Avoid Discharge into drains, water courses or onto the ground unless authorized by permit.

Methods for containment Dike the spilled material, where this is possible. This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways.

Methods for cleaning up For waste disposal see section 13 of the MSDS. Remove sources of ignition. Absorb spillage with non-combustible, absorbent material.

Other information Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling Local exhaust is recommended. Avoid inhalation of vapors and spray mist and contact with skin and eyes. Vapors are heavier than air and may travel along the floor and in the bottom of containers. Vapors may be ignited by a spark, a hot surface or an ember. Ground container and transfer equipment to eliminate static electric sparks. Observe good industrial hygiene practices. Wear protective gloves and appropriate clothing to prevent skin contact. Wear approved safety goggles.

Storage Follow rules for flammable liquids. Do not store near heat sources or expose to high temperatures. Store in closed original container in a dry place. Protect against direct sunlight. Store away from incompatible materials.

8. Exposure Controls/Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
Dibutyl Tin bisneodecanoate (68928-76-7)	STEL	0.2 mg/m ³
Dibutyltin dilaurate (77-58-7)	STEL	0.2 mg.m ³
Ethyl silicate (78-10-4)	TWA TWA	0.1 mg/m ³ 10 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Dibutyl Tin bisneodecanoate (68928-76-7)	PEL	0.1 mg/m ³
Dibutyltin dilaurate (77-58-7)	PEL	0.1 mg/m ³
Ethyl silicate (78-10-4)	PEL	100 ppm 850 mg/m ³

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Dibutyl tin bisneodecanoate (68928-76-7)	STEL	0.2 mg/m ³
Dibutyltin dilaurate (77-58-7)	STEL	0.2 mg/m ³
Ethyl silicate (78-10-4)	TWA TWA	0.1 mg/m ³ 10 ppm 85 mg/m ³

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value
Dibutyl Tin bisneodecanoate (68928-76-7)	STEL	0.2 mg.m ³
Dibutyltin dilaurate	STEL	0.2 mg/m ³
Ethyl silicate (78-10-4)	TWA TWA	0.1 mg/m ³ 10 ppm 85 mg/m ³

Canada. Ontario OELs. (Ministry of Labor - Control of Exposure to Biological or Chemical Agents)

Components	Type	Value
Dibutyl Tin bisneodecanoate (68928-76-7)	TWA	0.1 mg/m ³
Dibutyltin dilaurate	STEL	0.2 mg/m ³
Ethyl silicate (78-10-4)	TWA	10 ppm 85 mg/m ³

Canada. Quebec OELs. (Ministry of Labor- Regulation Respecting the Quality of the Work Environment)

Components	Type	Value
Dibutyl Tin bisneodecanoate (68928-76-7)	STEL	0.2 mg/m ³
Dibutyltin dilaurate	TWA	0.1 mg/m ³
Ethyl silicate (78-10-4)	TWA	0.1 mg/.m ³ 10 ppm 85 mg/m ³

Mexico. Occupational Exposure Limit Values

Components	Type	Value
Dibutyl Tin bisneodecanoate (68928-76-7)	STEL	0.2 mg/m ³
Dibutyltin dilaurate	STEL	0.2 mg/m ³
Ethyl silicate (78-10-4)	TWA	0.1 mg/m ³

STEL

30 ppm

TWA

255 mg/m³

85 mg/m³

10 ppm

Exposure guidelines Follow standard monitoring procedures.

Engineering controls Ensure adequate ventilation, especially in confined areas. Provide adequate general and local exhaust ventilation.

Personal protective equipment

Eye/Face protection Do not get in eyes. Eye wash fountain is recommended.

Skin protection Wear appropriate chemical resistant clothing. Suitable gloves can be recommended by the glove supplier.

Respiratory protection Respiratory protection must be used if air contamination exceeds acceptable level. Selection and use of respiratory protective equipment should be in accordance with OSHA General Industry Standard 29 CFR 1910.134; or in Canada with CSA Standard Z94.4.

General hygiene Considerations Do not get in eyes. Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

Appearance	Not available
Color	Translucent
Odor	Slightly
Odor threshold	Not available
Physical state	Liquid
Form	Viscous liquid
pH	Not available
Melting point	Not available
Freezing point	Not available
Boiling point	Not available
Flash point	> 141 F (> 62 C)
Evaporation rate	Not available
Flammability limits in air, upper, % by volume	Not available
Flammability limits in air, lower, % by volume	Not available
Vapor pressure	Not available
Vapor density	Not available
Specific gravity	1.03
Solubility (water)	Not determined. Reacts

Partition coefficient (N-octanol/water) No data available

Auto-ignition temperature Not available

Decomposition Temperature Not available

10. Chemical Stability & Reactivity Information

Chemical stability Material reacts with water. Stable under normal temperature conditions. Contact with water liberates ethanol.

Conditions to avoid Moisture. Heat, sparks, flames. Protect against direct sunlight.

Incompatible materials Acids. Alkalines. Oxidizing agents. Water.

Hazardous decomposition products Carbon dioxide. Carbon monoxide. Silicon dioxide. Formaldehyde.

Possibility of hazardous reactions Will not occur.

11. Toxicological Information

Toxicological data Components

Test Results

Dibutyltin dilaurate

Acute Oral LD50 Rat: 175 mg/kg

Ethyl silicate (78-10-4)

Acute Other LD50 Rat: 85 mg/kg
Acute Dermal LD50 Rabbit: 5878 mg/kg
Acute Inhalation LC50 Rat: > 880 ppm 4 h
Acute Oral LD50 Rat: 6270 mg/kg

Local effects Components of the product may be absorbed into the body through the skin. Blood disorder may occur after ingestion. Liver toxicity. Contact may irritate or burn eyes.

US ACGIH Threshold Limit Values: Skin Designation

Dibutyl Tin bisneodecanoate (CAS 68928-76-7)

Can be absorbed through the skin.

Dibutyltin dilaurate (CAS 77-58-7)

Can be absorbed through the skin.

Sensitization Not classified

Chronic effects Prolonged inhalation may be harmful. Repeated absorption may cause disorder to central nervous system, liver, kidneys and blood. Prolonged exposure may cause chronic effects.

Sub chronic effects Blood disorders may occur after prolonged inhalation, prolonged skin contact and/or ingestion. Kidney injury may occur.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP or OSHA.

ACGIH Carcinogens

Dibutyl Tin bisneodecanoate (CAS 68928-76-7)

A4 Not classifiable as a human carcinogen.

Dibutyltin dilaurate (CAS 77-58-7)

A4 Not classifiable as a human carcinogen.

Epidemiology No data available.

Mutagenicity No data available.

Reproductive effects No data available.

Further information Symptoms may be delayed.

12. Ecological Information

Eco toxicological data Components

Test Results

Ethyl silicate (78-10-4)

EC50 Daphnia: 4 mg/l 15 days
IC50 Green algae (*Dunaliella bioculata*): 1 – 5 mg/l 30 days

Eco toxicity The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Environmental effects Not classified as an environmental hazard.

Persistence and degradability No data available.

**Bioaccumulation/
Accumulation** No data available

**Partition coefficient
(n-octanol/water)** No data available.

Mobility in environmental media The product contains organic solvents which will evaporate easily from all surfaces. The product is slightly soluble in water.

13. Disposal Considerations

Disposal instructions Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities. Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulation, and material characteristics at time of disposal.

**Waste from residues/
Unused products** Dispose in accordance with applicable federal, state and local regulations.

14. Transport Information

This material is not regulated under 49 CFR if in a container of 119 gallon capacity or less.

DOT

Basic shipping requirements:

UN number	NA1993
Proper shipping name	Combustible liquid, n.o.s. (Ethyl silicate)
Hazard class	Comb liq
Subsidiary hazard class	None
Packing group	III
Environmental hazards	
Marine pollutant	Yes
Special precautions	This material is not regulated under 49 CFR if in a container of 119 gallon capacity or less.
Labels required	None.
Additional information:	
Special provisions	IB3, T1, T4, TP1
Packaging exceptions	150
Packaging non bulk	203
Packaging bulk	241

IATA

Not regulated as dangerous goods.

IMDG

Basic shipping requirements:

UN number	3082
Proper shipping name	Environmentally Hazardous Substance, Liquid, n.o.s. (Dibutyl Tin bisneodecanoate, Dibutyltin dilaurate)
Hazard class	9
Packing group	III
Environmental hazards	
Marine pollutant	yes
EmS No.	F-A, S-F

TDG

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List

CERCLA/SARA Hazardous Substances - Not applicable.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated

CERCLA (Superfund) reportable quantity (lbs) (40 CFR 302.40)

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

Section 302 extremely Hazardous substance (40 CFR 355, Appendix A) No

Section 311/312 (40 CFR No 370) No

Drug Enforcement Administration (DEA) (21 CFR 1308.11-150) Not controlled.

Canadian regulations This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS status Controlled

WHMIS classification B3 – Flammable/Combustible
D2B – Other Toxic Effects - TOXIC

Inventory status

Country (s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Unites States and Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s).

State regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US – California Hazardous Substances (Director's): Listed substance

Dibutyl Tin bisneodecanoate (CAS 68928-76-7)	Listed
Dibutyltin dilaurate (CAS 77-58-7)	Listed
Ethyl silicate (CAS 78-10-4)	Listed

US – Massachusetts RIK - Substance: Listed substance

Ethyl silicate (CAS 78-10-4)	Listed
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US – New Jersey RTK - Substances: Listed substance

Ethyl silicate (CAS 78-10-4)	Listed
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US – Pennsylvania RTK – Hazardous Substances: Listed substance

Ethyl silicate (CAS 78-10-4)	Listed
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Mexico regulations

This safety data sheet was prepared in accordance with the official Mexican Standard (NOM-018-STPS-2000).

16. Other Information**Further information**

HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings

Health: 2*
Flammability: 2
Physical hazard: 1

NFPA ratings

Health: 2
Flammability: 2
Instability: 1

Disclaimer

Additional information is given in the Material Safety Data Sheet. The information in the sheet was written based on the best knowledge and experience currently available.