MATERIAL SAFETY DATA SHEET

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1. PRODUCT AND COMPANY IDENTIFICATION

Product Name CARBOMER 980G Polymer

Company Identification

NAME OF SUPPLIER	NOVELAB LIMITED
ADDRESS OF SUPPLIER	CHURCHILL HOUSE 142-146 OLD STREET
	LONDON
	ENGLAND ECIV 9BW
TELEPHONE NUMBER	+44(0)8456030403
TELEFAX NUMBER	+44(0)1928572255

EMERGENCY TELEPHONE

China	+86-21-65063663(China)
Europe,Israel & Americals except USA	+44-8456030406(UK)
Middle East & Africa	+44-8456030405(UK)
USA	800-424-9898(USA)

2. COMPOSITION, INFORMATION ON INGREDIENTS

--Ingredient--	-CAS Number-	---%---
Acrylic polymer	9003-01-4	<100

Notes:
Amounts specified are typical and do not represent a specification.

3. HAZARDS IDENTIFICATION

Acute Health Effects
Powder/dust eye irritation is a physical, not a chemical effect.
Solid particles on the eye (powder/dust) may cause pain and be accompanied by irritation.
Dust inhalation may cause coughing, mucous production and shortness of breath.

Chronic Health Effects
Contact dermatitis may occur in individuals under extreme conditions of prolonged and repeated contact, high exposure and temperature, and occlusion (held onto the skin) by clothing.

Routes of Exposure/Entry
Eyes, skin contact, inhalation, ingestion.

Target Organs
Respiratory system, skin.

Medical Conditions Aggravated by Exposure
Pre-existing respiratory disease(s) may be aggravated by prolonged or repeated inhalation of airborne dust.
Pre-existing skin problems may be aggravated by prolonged or repeated

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contact.

Carcinogenic Status

Not listed or regulated by IARC, NTP, OSHA, or ACGIH.

4. FIRST AID MEASURES

If irritation or other symptoms (as noted above) occur or persist from any route of exposure, remove the affected individual from the area: see a physician/get medical attention.

Eye Contact

Water (moisture) swells this product into a gelatinous film and, when in contact with the eye, may be difficult to remove using only water. Immediately flush eyes with plenty of one percent (1%) physiological saline for five minutes while holding eyelids open; see a physician. If no saline is easily available, flush eyes with plenty of clean water for 15 minutes; see a physician.

Skin Contact

Wash the affected area thoroughly with plenty of water and soap.

Inhalation

If any processing vapors, decomposition products or particulates are inhaled, remove individual(s) to fresh air. Provide protection before allowing reentry.

Ingestion

No ingestion effects known. Treat symptomatically.

5. FIRE FIGHTING MEASURES

NFPA Flammability Class	N/A
Flash Range	Not Applicable
Explosive Range	See information below.

Fire and Explosive Properties

Typical results expected for this family of products:

Minimum explosive concentration:	0.13 oz/ft3 (130 g/m3)
Minimum ignition energy:	1.60 joules (dispersed dust cloud)
Deflagration Index, Kst (estimate):	130 bar m/sec
Volume resistivity:	3.24 x 10+16 ohm-cm
Maximum rate of pressure rise:	5,500 psi @ 0.5 oz/ft3 (380 bars @ 500 g/cm3)
Maximum explosion pressure:	70 psi @ 0.5 oz/ft3 (4.8 bars @ 500 g/cm3)
Ignition temperature of dust cloud:	968 F (520 C)
National Electrical Code (NFPA 70):	Group G dust.

As with all organic dusts, fine particles suspended in air in critical proportions and in the presence of an ignition source may ignite and/or explode. Dust may be sensitive to ignition by electrostatic discharge, electrical arcs, sparks, welding torches, cigarettes, open flame, or other significant heat sources. As a

precaution, implement standard safety measures for handling finely divided organic powders. See Section 7 for suggested measures. This product has a high volume resistivity and a propensity to build up static electricity which may be discharged as a spark. A spark can be an ignition source for solvent vapor/air mixtures. If you add this product to a solvent, ensure appropriate safe handling practices such as provision for inerting flammable vapors and measures such as those cited above.

Extinguishing Media

Use water spray, dry chemical, or foam. Carbon dioxide may be ineffective on larger fires due to a lack of cooling capacity which may result in reignition.

Fire Fighting Instructions

Avoid hose streams or any method which will create dust clouds. Wear self-contained breathing apparatus (SCBA) equipped with a full facepiece and operated in a pressure-demand mode (or other positive pressure mode) and approved protective clothing. Personnel without suitable respiratory protection must leave the area to prevent significant exposure to hazardous gases from combustion, burning or decomposition. In an enclosed or poorly ventilated area, wear SCBA during cleanup immediately after a fire as well as during the attack phase of firefighting operations.

6. ACCIDENTAL RELEASE MEASURES

Clean-Up Techniques

Using care to avoid dust generation, vacuum or sweep into a closed container for reuse or disposal. Do not sweep or flush spilled product into public sewer, streams or other water systems. If inhalation of dust cannot be avoided, wear a particulate respirator approved by NIOSH/MSHA.
CAUTION: Contact with water creates a very slippery film. If this occurs, the film can be broken down for cleanup with detergent solution.

7. HANDLING AND STORAGE

Handling

Although the risk of a dust explosion is low, as a precaution, implement the following safety measures:
Bond, ground and properly vent conveyors, dust control devices and other transfer equipment.
Eliminate ignition sources (e.g., sparks, static buildup, excessive heat, etc.).
Prohibit flow of polymer, powder or dust through non-conductive ducts, vacuum hoses or pipes, etc.; only use grounded, electrically conductive transfer lines when pneumatically conveying product.
Prevent accumulation of dust (e.g., well-ventilated conditions, promptly vacuuming spills, cleaning overhead horizontal surfaces,

etc.).
Use under well-ventilated conditions.
Do not get in eyes.
Do not ingest, taste, or swallow.
Avoid repeated or prolonged skin contact.
Avoid routine inhalation of dust of any kind. Exercise care when emptying containers, sweeping, mixing or doing other tasks which can create dust.
Wash thoroughly after handling this product. Always wash up before eating, smoking or using the facilities.

Storage

Keep container closed when not in use.
Store in dry area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

	--ACGIH-TWA---	-ACGIH-STEL---	---OSHA-TWA---	--OSHA-STEL---
Acrylic polymer	N/E	N/E	N/E	N/E

Notes:

Novelab recommends an 8-hour TWA exposure limit of 0.05 mg/m3 for the polymer in this product.

Engineering Controls

Always provide effective general and, when necessary, local exhaust ventilation to draw dust away from workers to prevent routine inhalation.
Ventilation must be adequate to maintain the ambient workplace atmosphere below the exposure limit(s) outlined in the MSDS.
Ventilation guidelines/techniques may be found in publications such as Industrial Ventilation: American Conference of Governmental Industrial Hygienists, 1330 Kemper Meadow Drive, Cincinnati, OH, 45240-1634, USA.

Eye/Face Protection

Eye protection (e.g., goggles) suitable for keeping dust out of the eyes.

Skin Protection

Wear protective gloves.

Respiratory Protection

If respirable dust exposures exceed 0.05 mg/m3 (8-hour TWA), wear a NIOSH-approved respirator equipped with high efficiency particulate (HEPA) filters.
Use respirator in accordance with manufacturer’s use limitations and OSHA standard 1910.134 (29CFR).
Respiratory protection, such as a NIOSH/MSHA approved positive pressure self-contained breathing apparatus, is necessary to prevent inhalation of decomposition or combustion gases.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	Particle
Appearance/Color	White
Odor	Slight acetic
Solubility (in water)	Appreciable
pH Value	2.0-3.5 @ 1% in H2O
Boiling Range	Not Applicable
Vapor Pressure (mmHg)	Not Applicable
Melting Point	Not Available
Evaporation Rate	Not Volatile
Vapor Density	Not Volatile
Partition Coefficient	Not Available
Volatile Weight(%)	(moisture) <2.0%
Bulk Density	0.40g/mL-0.55 g/mL

10. STABILITY AND REACTIVITY

Stability	This product is stable
Hazardous Polymerization	Hazardous polymerization will not occur

Incompatibility with other materials
Heat may be generated if polymer comes in contact with strong basic materials such as ammonia, sodium hydroxide, potassium hydroxide or strongly basic amines. Precautions beyond those described herein, such as chemical splash goggles or protective clothing, must be considered as the need exists.

Hazardous Decomposition Products
Carbon monoxide, carbon dioxide, hydrocarbons, and irritating vapors.

11. TOXICOLOGICAL INFORMATION

Route	Species	Exposure and Dose
Acrylic polymer		
Oral	Rat, adult	LD50 > 2500. mg/kg
Skin	Rabbit, adult	LD50 > 3000. mg/kg

Note: These results are typical for this family of polymers.
Chronic oral toxicity: No significant effects in rats or dogs fed with resin as 5% of diet for 6-1/2 months.
Skin: No evidence of irritation or sensitization during human patch testing.
No evidence of adverse lung effects from polyacrylate dust exposure was observed in studies of workers. Neither lower airway symptoms, chronic parenchymal disease, radiographic changes, nor clinically important effects on lung function were found to result from

polyacrylate exposure. Only a small increase in upper respiratory symptoms appeared to be related to exposure. However, various lung effects such as inflammation, hyperplasia (abnormal increases in the number of cells composing a tissue or organ), scarring (fibrosis), changes in the air sac (alveolar) ducts of the lung, and tumors were noted in laboratory studies with rodents inhaling concentrations of a water absorbent sodium polyacrylate dust greater than 0.05 mg/m3 for the majority of their lives. Furthermore, some lung or lung cell effects were found in rodent laboratory studies of shorter duration.

12. ECOLOGICAL INFORMATION

Acrylic polymer
96 Hour static acute toxicity: Bluegill, Sunfish, LC50 580-2000 mg/L
96 Hour static acute toxicity: Daphnia Magna, LC50 168-280 mg/L
Crosslinked polyacrylic acid polymers in this product are not biodegradable; do not inhibit waste treatment bacteria; and do not pass through typical wastewater treatment to the environment, but are instead removed with the biomass.

13. DISPOSAL CONSIDERATIONS

For waste disposal purposes, this product is not known to be defined or designated as hazardous by current provisions of the Federal (EPA) Resource Conservation and Recovery Act (RCRA, 40CFR261).
Incinerate or landfill waste in a properly permitted facility in accordance with federal, state and local regulations.
In appropriate dust/air ratio, dust cloud in air has explosion potential. Therefore, land disposal must be in closed containers.
If disposal is in bulk form, recognize that this polymer absorbs moisture resulting in a gelatinous mass that is unable to support human weight.

14. TRANSPORTATION INFORMATION

UN Number	N/A
UN Pack Group	N/A
UN Class	N/A
ICAO/IATA Class	N/A
IMDG Class	N/A
ADR/RID Class	N/A

Notes:
This product is NOT REGULATED for domestic and international transportation.

15. REGULATORY INFORMATION

--SARA Title III Section 313----------

This product does not contain any substance(s) subject to the reporting requirements (i.e., at or above de minimus quantities) of Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) 40 CFR 372.

--SARA Title III Section 312 Hazard Category (40 CFR 311/312)--

Acute Health:	No	Release of Pressure:	No
Chronic Health:	Yes	Reactive:	No
Fire:	No		

--California Proposition 65------

"Substances known to the state of California to cause cancer, birth defects or other reproductive harm": None known to be present or none in reportable amounts for occupational exposure as per OSHA's approval of the California Hazard Communication Standard, Federal Register, page 31159 ff, 6 June 1997.

US (Federal) Regulations

TSCA: All components of this product are either listed on the U.S. Toxic Substances Control Act (TSCA) inventory of chemicals or are otherwise compliant with TSCA regulations.

International Regulations

Canadian WHMIS: This product is NOT controlled under the Canadian Workplace Hazardous Materials Information System (WHMIS).
Canadian Ingredient Disclosure List (WHMIS): Not applicable.
Canadian DSL: All components in this product are on the Canadian Domestic Substances List (DSL) or are exempt from listing.
Monomers are listed: European Union EINECS.

16. OTHER INFORMATION

HMIS Rating (H-F-R-PPI) 0-1-0-B
NFPA Rating (H-F-R) 2-1-0
KEY: 0=Insignificant; 1=Slight; 2=Moderate; 3=High; 4=Extreme.
National Fire Protection Association (NFPA) rating identifies the severity of hazards of material during a fire emergency (i.e., "on fire").
Hazardous Materials Identification System (HMIS), National Paint and Coatings Assn. rating applies to product "as packaged" (i.e., ambient temperature).

Legend:

ACGIH: American Conference of Governmental Industrial Hygienists
A1: Confirmed human carcinogen
A2: Suspected human carcinogen

A3: Animal carcinogen
CAS No: Chemical Abstract Service Registry Number
IARC: International Agency for Research on Cancer
Group1: Carcinogenic to humans
Group2A: Probably carcinogenic to humans
Group2B: Possibly carcinogenic to humans
Group3: Unclassifiable as a carcinogen to humans
MSHA: Mine Safety and Health Administration
NIOSH: National Institute for Occupational Safety and Health
NTP: National Toxicology Program
N/A: Not Applicable
N/E: None Established
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
PNOC: Particulates Not Otherwise Classified
RTK: Right To Know
STEL: Short Term Exposure Limit (15 minute Time Weighted Average)
TLV: Threshold Limit Value
C: Ceiling limit
S: Skin notation refers to the potential significant contribution to the overall exposure by the cutaneous route including mucous membranes and the eyes and by direct skin contact with the substance
WEEL: Workplace Environmental Exposure Level
WHMIS: Canadian Workplace Hazardous Materials Information System

Users Responsibility/Disclaimer of Liability

This bulletin cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained in this bulletin should be provided to your employees or customers. It is your responsibility to develop appropriate work practice guidelines and employee instructional programs for your operation.

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