Safety Data Sheet

Prolong -20

1. IDENTIFICATION

Product Identifier: Prolong -20
Canadian TDG: Non regulated
Synonyms: Not applicable
Chemical Family: Not known

Manufacturer/ Supplier:
Western Seal Corp
30 – 3703 Mitchelmore Avenue
Saskatoon, SK
S7P 0C5

Prepared by: The Environmental, Health and Safety Department of Western Seal Corp
Preparation Date of SDS: November 10, 2021
Telephone number of preparer:306-260-6426
24-Hour Emergency Telephone Number (CANUTEC): (613) 996-6666

2. HAZARDS IDENTIFICATION

Classified according to Canada's Hazardous Products Regulations (WHMIS 2015) and the US Hazard Communication Standard (HCS 2012).

GHS Classification
Acute toxicity, oral: Category 5
Specific Target Organ Toxicity (Repeated Exposure): Category 2
Target Organs: Kidney, Liver

Signal Word: Warning

Hazard Statement(s):
H303 - May be harmful if swallowed
H373 - May cause damage to organs through prolonged or repeated exposure

GHS Precautionary Statement(s):

P312 - Call a POISON CENTER or doctor/physician if you feel unwell
P260 - Do not breathe dust/ fumes/ gas/ mist/ vapours/ spray.
P314 - Get medical attention if you feel unwell.
P501 - Dispose of contents and container in accordance with local, regional, national and international regulations.

Other Hazards: None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Concentration %
Ethylene Glycol	107-21-1	30-50

Notes
If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

First-aid Measures
Inhalation
Remove victim to fresh air and keep at rest in a position comfortable for breathing. If effects occur consult a physician.
Skin Contact
Flush with copious amounts of water as a precaution. If skin irritation or a rash occurs, get medical advice/attention.
Eye Contact
Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Remove contact lenses, if present and easy to do. If eye irritation persists, get medical advice/attention.
Ingestion
Wash out mouth with water. Remove dentures if any. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe.

Most Important Symptoms and Effects, Acute and Delayed
None known.

Immediate Medical Attention and Special Treatment
Special Instructions
Treat symptomatically and supportively.

Note to Physician
It is estimated that the oral dose to adults is of the order of 1.0 ml/kg. Ethylene glycol is metabolized by alcohol dehydrogenate to various metabolites including glyceraldehyde, glycolic acid and oxalic acid which cause an elevated anion-gap metabolic acidosis and renal tubular injury. The signs and symptoms in ethylene glycol poisoning are those of metabolic acidosis, CNS depression and kidney injury. Urinalysis may show albuminuria, hematuria and oxaluria. Clinical chemistry may reveal anion-gap metabolic acidosis and uremia. The currently recommended medical management of ethylene glycol poisoning includes elimination of ethylene glycol and metabolites, correction of metabolic acidosis and prevention of kidney injury. It is essential to have immediate and follow up urinalysis and clinical chemistry. There should be particular emphasis on acid-base balance and renal function tests. A continuous infusion of 5% sodium bicarbonate with frequent monitoring of electrolytes and fluid balance is used to achieve correction of metabolic acidosis and forced diuresis. As a competitive substrate for alcohol dehydrogenase, ethanol is antidotal. Given in the early stages of intoxication, it blocks the formulation of nephrotoxic metabolites. A therapeutically effective blood concentration of ethanol is in the range 100 - 150 mg/dl and should be achieved by a rapid loading dose and maintained by intravenous infusion. For severe and /or deteriorating cases, hemodialysis may be required. Dialysis should be considered for patients who are symptomatic, have severe metabolic acidosis, a blood ethylene glycol concentration greater than 25 mg/dl, or compromise of renal functions. A more effective intravenous antidote for physician use in 4-methylpyrazole, a potent inhibitor of alcohol dehydrogenases which effectively blocks the formation of toxic metabolites of ethylene glycol. It has been used to decrease the metabolic consequences of ethylene glycol poisoning before metabolic

acidosis coma, seizures and renal failure have occurred. A generally recommended protocol is a loading dose of 15 mg/kg followed by 10 mg/kg every 12 hours for 4 doses and the 15 mg/kg every 12 hours until the ethylene glycol concentrations are below 20 mg/100ml.Slow intravenous infusion is required. Since 4-methylpyrazole is dialyzable, increased dosage may be necessary during hemodialysis. Additional therapeutic measures may include the administration of cofactors involved in the metabolism of ethylene glycol. Thiamine (100 mg) and pyridoxine (50 mg) should be given every six hours.

Pulmonary edema with hypoxemia has been described in a number of patients following poisoning with ethylene glycol. The mechanism of production has not been elucidated, but it appears to be non-cardiogenic in origin in several cases. Respiratory support with mechanical ventilation and positive end expiratory pressure may be required. There may be cranial nerve involvement in the late stages of toxicity from swallowed ethylene glycol. In particular, effects have been reported involving the seventh, eighth and ninth cranial nerves, presenting with bilateral facial paralysis, diminished hearing, and dysphagia.

5. FIRE-FIGHTING MEASURES

Extinguishing Media
Suitable Extinguishing Media
Water spray, carbon dioxide, dry chemical powder or appropriate foam.
Unsuitable Extinguishing Media
Do not use direct water stream. May spread fire.

Specific Hazards Arising from the Chemical
Exposure to combustion products may be a hazard to health.
Special Protective Equipment and Precautions for Fire-fighters
Evacuate area. Approach fire from upwind to avoid hazardous vapours or gases.
Before entry, especially into confined areas, use an appropriate monitor to check for: toxic gases or vapours, flammable or explosive atmosphere.
Fire-fighters may enter the area if positive pressure SCBA and full Bunker Gear is worn. If there is potential for skin contact with concentrated cleaner: chemical protective clothing (e.g. chemical splash suit) and positive pressure SCBA may be necessary. See Skin Protection in Section 8 (Exposure Controls/Personal Protection) for advice on suitable chemical protective materials.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures
Follow safe handling advice and personal protective equipment recommendations.

Environmental Precautions
Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g. by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

Methods and Materials for Containment and Cleaning Up
Soak up with inert absorbent material. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. Local or national 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 regulations are applicable. Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

Other Information
Report spills to local health, safety and environmental authorities, as required.

7. HANDLING AND STORAGE

Precautions for Safe Handling
When handling diluted product: no special handling precautions are necessary. Use only with adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Take care to prevent spills, waste and minimize release to the environment.

Conditions for Safe Storage
Keep in properly labeled containers. Store in accordance with the particular national regulations. Store separate from incompatible materials (see Section 10: Stability and Reactivity).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Ingredients	ACGIH® TLV®	OSHA PEL	IDLH
Ethylene Glycol	100 mg/m3 Ceiling	50 ppm Ceiling 125 mg/m3 Ceiling	Not available

Consult local authorities for provincial or state exposure limits.

Appropriate Engineering Controls
General ventilation is usually adequate. Provide eyewash and safety shower if contact or splash hazard exists. When handling large quantities of concentrated product: use a local exhaust ventilation and enclosure, if necessary, to control amount in the air.

Individual Protection Measures
Eye/Face Protection
Do not get in eyes. Wear chemical safety goggles.
Skin Protection
Skin should be washed after contact.
Other Personal Protection Data:
Ensure that eyewash stations and safety showers are proximal to the work-station location. When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

9. CHEMICAL AND PHYSICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Pink Liquid
Odour	Not available
Odour Threshold	Not available
pH	8.0-9.5
Melting Point/Freezing Point	Not available
Initial Boiling Point/Range	Not available
Evaporation Rate	0.01 (estimated)
Flammability (solid, gas)	Not applicable (liquid).

Upper/Lower Flammability or Explosive Limit	Not available
Vapour Pressure	Not available
Vapour Density (air = 1)	Not available
Relative Density (water = 1)	Not available
Solubility	Soluble in water
Auto-ignition Temperature	Not available
Decomposition Temperature	Not available
Viscosity (dynamic)	Not available
Other Information	
Octanol / Water Partition Coefficient:	Not available
Physical State:	Liquid

10. STABILITY AND REACTIVITY

Reactivity
Not reactive. Not sensitive to mechanical impact.

Chemical Stability
Normally stable.

Possibility of Hazardous Reactions
None expected under normal conditions of storage and use.

Conditions to Avoid
None known.

Incompatible Materials
Oxidizing agents (e.g. peroxides)

Hazardous Decomposition Products
Hazardous decomposition products depend upon temperature, air supply, and the presence of other materials. Hazardous decomposition products may include and are not limited to: aldehydes, ketones, organic acids.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure
Inhalation; skin contact; eye contact; ingestion.

Ingredients	LD50s and LC50s Route & Species
Ethylene Glycol	Oral LD50 (Rat) = 4000 mg/kg Dermal LD50 (Rabbit) = 9530 µL/kg

Potential Health Effects

Eyes:	May cause slight eye irritation. Vapours or mists may cause eye irritation. Corneal injury is unlikely.
Skin:	Brief contact is essentially non-irritating to skin. Prolonged contact may cause skin irritation with local redness. Repeated skin exposure to large quantities may result in absorption of harmful amounts. Massive contact with damaged skin or if material sufficiently hot to burn skin may result in absorption of potential lethal amounts.

Ingestion:	Oral toxicity is expected to be moderate in humans due to ethylene glycol even though tests with animals show a lower degree of toxicity. Excessive exposure may cause central nervous system effects, cardiopulmonary effects (metabolic acidosis), and kidney failure. Swallowing may result in severe effects, even death. The lethal dose in adult humans for ethylene glycol is approximately 3 ounces (100 ml) (1/3 cup). May cause nausea or vomiting. May cause abdominal discomfort or diarrhea. Cardiac failure, pulmonary edema, and severe kidney damage may develop. May be fatal if swallowed..
Inhalation:	At room temperature, exposure to vapor is minimal due to low volatility. With good ventilation, single exposure is not expected to cause adverse effects. If material is heated or areas are poorly ventilated, vapor/mist may accumulate and cause respiratory irritation and symptoms such as headache and nausea.
Chronic Exposure:	Repeated skin contact with ethylene glycol may, in a very small proportion of cases, cause sensitization with the development of allergic contact dermatitis. The incidence is significantly less than 1% with the undiluted material. Repeated inhalation of ethylene glycol may produce signs of central nervous system involvement, particularly dizziness and nystagmus (involuntary eye movement). Exposure may place individuals with existing heart problems at added risk of potential.

Acute Test of Product
Acute Oral LD50: Not available.
Acute Dermal LD50: Not available.
Acute Inhalation LC50: Not Available.

STOT (Specific Target Organ Toxicity) - Single Exposure Inhalation
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Aspiration Hazard
Not an aspiration hazard.

STOT (Specific Target Organ Toxicity) - Repeated Exposure
In rare cases, repeated excessive exposure may cause central nervous system effects.

Skin Corrosion/Irritation
Prolonged skin contact may cause temporary irritation.

Serious Eye Damage/Eye Irritation
May cause slight temporary eye irritation.
Corneal injury is unlikely.
Mist may cause eye irritation.

Respiratory or Skin Sensitization
This product is not expected to cause respiratory or skin sensitization.

Carcinogenicity

Ingredients	IARC - Carcinogens	ACGIH – Carcinogens
Ethylene Glycol	Not listed	A4

Reproductive Toxicity/ Teratogenicity/ Embryotoxicity/ Mutagenicity
Based on animal studies, ingestion of very large amounts of ethylene glycol appears to be the major and possibly only route of exposure to produce birth defects. Exposures by inhalation or skin contact, the primary routes of occupational exposure, had minimal effect on the fetus, in animal studies. Ethylene glycol has been shown to produce dose-related teratogenic effects in rats and mice when given by gavage or in drinking water at high

concentrations or doses. The no-effect doses for developmental toxicity for ethylene glycol given by gavage over the period of organogenesis has been shown to be 150 mg/kg/day for the mouse and 500 mg/kg/day for the rat. Also, in a preliminary study to assess the effects of exposure of pregnant rats and mice to aerosols at concentrations of 150, 1000 and 2500 mg/m_3 for 6 hours a day throughout the period of organogenesis, teratogenic effects were produced at the highest concentration, but only in mice. The conditions of these latter experiments did not allow a conclusion as to whether the developmental toxicity was mediated by inhalation of aerosol, percutaneous absorption of ethylene glycol from contaminated skin, or swallowing of ethylene glycol as a result of grooming the wetted coat. In a further study, comparing effects from high aerosol concentration by whole-body or nose-only exposure, it was shown that nose-only exposure resulted in maternal toxicity (1000 and 2500 mg/m_3) and developmental toxicity with minimal evidence of teratogenicity (2500 mg/m_3). The no-effects concentration (based on maternal toxicity) was 500 mg/m_3. In a further study in mice, no teratogenic effects could be produced when ethylene glycol was applied to the skin of pregnant mice over the period of organogenesis. The above observations suggest that ethylene glycol is to be regarded as an animal teratogen. There is currently no available information to suggest that ethylene glycol has caused birth defects in humans. Cutaneous application of ethylene glycol is ineffective in producing developmental toxicity. Exposure to high aerosol concentrations is only minimally effective in producing developmental toxicity. Ingestion of large amounts of ethylene glycol has been shown to interfere with reproduction in animals. Specifically, growth retardation and decreased litter size in rats and mice and decreased mating frequency in mice were observed.

Interactive Effects
No information was located.

Additional Information
No information was located.

12. ECOLOGICAL INFORMATION

Ingredients	Ecotoxicity – Fish Species Data	Acute Crustaceans Toxicity:	Ecotoxicity – Freshwater Algae Data
Ethylene Glycol	LC50 96 h (Oncorhynchus mykiss) 41000 mg/L LC50 96 h (Oncorhynchus mykiss) 14-18 ml/L static LC50 96 h (Lepomis macrochirus) 27540 mg/L static LC50 96 h (Oncorhynchus mykiss) 40761 mg/L static LC50 96 h (Pimephales promelas) 40000-60000 mg/L static LC50 96 h (Poeciliareticulata) 16000 mg/L static LC50 96 h (Oncorhynchus mykiss) 41000 mg/L	Not Available	EC50 96 h Pseudokirchneriella subcapitata 6500 – 13000 mg/L

Other Information
Material is practically non-toxic to aquatic organisms. MOVEMENT & PARTITIONING: Bioconcentration potential is low(BCF less than 100 or Log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50). Henry's Law Constant (H) is estimated to be 8.05E-09 atm.m3/mole. Soil organic carbon/water partition coefficient (Koc) is estimated to be 1. Measured log octanol/water partition coefficient (log Pow) is -1.36 Material is readily biodegradable.

13. DISPOSAL CONSIDERATIONS

Disposal Methods
Recommended disposal methods are for the product, as sold. (Used material may contain other hazardous contaminants). The required hazard evaluation of the waste and compliance with the applicable hazardous waste laws are the responsibility of the user.

Disposal methods: Diluted product can be flushed to sanitary sewer.

Disposal considerations: Dispose of in accordance with local, state, and federal regulations.

14. TRANSPORT INFORMATION

DOT (U.S.):
DOT Shipping Name: Not Regulated.
DOT Hazardous Class Not Applicable.
DOT UN Number: Not Applicable.
DOT Packing Group: Not Applicable.
DOT Reportable Quantity (lbs): Not Available.
Marine Pollutant: No.

TDG (Canada):
TDG Shipping Name: Not Regulated.
Hazard Class: Not Applicable.
UN Number: Not Applicable.
Packing Group: Not Applicable.
Marine Pollutant: No.

Special Precautions for User
Not applicable

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

15. REGULATORY INFORMATION

U.S. TSCA Inventory Status: All components of this product are either on the Toxic Substances Control Act (TSCA) Inventory List or exempt.

Canadian DSL Inventory Status: All components of this product are either on the Domestic Substances List (DSL), the Non-Domestic Substances List (NDSL) or exempt.

California Proposition 65: Not Listed.
MA Right to Know List: Listed.
New Jersey Right-to-Know List: Listed.
Pennsylvania Right to Know List: Listed.

WHMIS Hazardous Class:
D1B TOXIC MATERIALS
D2A VERY TOXIC MATERIALS

16. OTHER INFORMATION

Additional Information: This product has been classified in accordance with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) and the SDS contains all the information required by the Hazardous Products Regulations (HPR).

Prepared by: The Environmental, Health and Safety Department of Western Seal Corp

Date of Latest Revision: November 10, 2021

Key to Abbreviations: IARC = International Agency for Research on Cancer. Group 3 = Not classifiable as to its carcinogenicity to humans. ACGIH® = American Conference of Governmental Industrial Hygienists. A4 = Not classifiable as a human carcinogen. NTP = National Toxicology Program. OSHA = US Occupational Safety and Health Administration. ACGIH® = American Conference of Governmental Industrial Hygienists. TLV® = Threshold Limit Value. TWA = Time-Weighted Average. STEL = Short-term Exposure Limit. A4 = Not classifiable as a human carcinogen. OSHA = US Occupational Safety and Health Administration. PEL = Permissible Exposure Limits. IDLH = Immediately Dangerous to Life and Health.

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*****END OF SDS*****