Safety Data Sheet

according to Regulation (EC) No. 2015/830

602-GEL-REV-A

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Issue Date 2017-11-21 **Revision Date** 2017-11-21 **Version** 2

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product Name 602-GEL-REV-A

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses Adhesives

Uses advised against No information available

1.3 Details of the supplier of the safety data sheet

Manufacturer
Dymax Corporation
318 Industrial Lane
Torrington, CT 06790
Tel: 860-482-1010
Fax: 860-496-0608

Manufacturing Sites
Dymax Europe GmbH
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Supplier
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For further information, please contact:

Contact Point Mr. Wolfgang Lorscheider
E-mail Address wlorscheider@dymax.com

1.4 Emergency Telephone

Emergency Telephone Chemtrec 001-703-527-3887 (24hrs)

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Belgium +(32)-28083237	**Greece** +(30)-2111768478	**Norway** +(47)-21930678	**Ukraine** +(380)-947101374
Bulgaria +(359)-32570104	**Hungary** +(36)-18088425	**Poland** +(48)-223988029	**UK (London)** +(44)-870-8200418
Croatia +(385)-17776920	**Ireland** +(353)-19014670	**Portugal** +(351)-308801773	
Czech Republic +(420)-228880039	**Italy** 800-789-767	**Slovakia** +(423)-233057972	**Israel (IL)** +(972)-37630639
Denmark +(45)-69918573	**Latvia** +(371)-66165504	**Slovenia** +(386)-18888016	**Russia** 8-800-100-6346
Finland	**Lithuania** +(370)-52140238	**Spain** 900-868538	**Saudi Arabia** +(966)-8111095861
France	**Luxembourg** +(352)-20202416	**Sweden** +(46)-852503403	**Turkey** +(90)-212-7055340

Australia +(61)-290372994	**India** 000-800-100-7141	**Indonesia** 001-803-017-9114	**New Zealand** +(64)-98010034
Malaysia +(60)-327884561	**Singapore** 800-101-2201	**Taiwan** 00801-14-8954	**Thailand** 001-800-13-203-9987

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture Classification of the substance or mixture

Regulation (EC) No 1272/2008

Skin corrosion/irritation	Category 1 - (H314)
Serious eye damage/eye irritation	Category 1 - (H318)
Skin sensitisation	Category 1 - (H317)
Specific target organ toxicity (STOT) — single exposure	Category 3 - (H335)
Chronic aquatic toxicity	Category 3 - (H412)

Physical hazards
None

Target Organ Effects
Respiratory system, EYES, Skin.

2.2 Label elements

Signal word **Danger**

Hazard statements
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H412 - Harmful to aquatic life with long lasting effects
H335 - May cause respiratory irritation
H336 - May cause drowsiness or dizziness

Contains 2-Hydroxyethyl methacrylate, tert-Butyl Perbenzoate, Maleic Acid
Contains Silane Coupling Agent, Epoxy Resin - EUH208 - May produce an allergic reaction

Precautionary Statements - Prevention
Do not breathe dust/fume/gas/mist/vapours/spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Contaminated work clothing should not be allowed out of the workplace
Use only outdoors or in a well-ventilated area
Avoid release to the environment

Precautionary Statements - Response
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
IF ON SKIN: Gently wash with plenty of soap and water
Take off contaminated clothing and wash it before reuse

Precautionary Statements - Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

2.3 Other Information

Unknown Acute Toxicity
0% of the mixture consists of ingredient(s) of unknown toxicity

Environmental product testing for acute and chronic aquatic effects determined classification to be Category 3

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

3.2. Mixtures

Hazardous components

Chemical Name	EC No	CAS No	Weight-%	GHS Classification
2-Hydroxyethyl methacrylate	212-782-2	868-77-9	40 - 69	Skin Irrit. 2 (H315) Eye Irrit. 2A (H319) Skin Sens. 1 (H317)
Acrylic acid	201-177-9	79-10-7	3 - <5	Flam. Liq. 3 (H226) Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332) Skin Corr. 1A (H314) Aquatic Acute 1 (H400)
tert-Butyl Perbenzoate	210-382-2	614-45-9	1 - <3	Org. Perox C (H242) Acute Tox. 4 (H332) Skin Irrit. 2 (H315) Skin Sens. 1 (H317) Aquatic Acute 1 (H400) Aquatic Chronic 3 (H412)
Maleic Acid	203-742-5	110-16-7	1 - <3	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Skin Sens. 1 (H317) Eye Irrit. 2 (H319) STOT SE 3 (H335) Aquatic Acute 3 (402)
Photoinitator	Listed	Proprietary	1 - <3	Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)
Silane Coupling Agent	Listed	Proprietary	<1	Skin Sens. 1 (H317)
Epoxy Resin	Listed	Proprietary	<1	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Skin Sens. 1 (H317) Aquatic Chronic 2 (H411)

Remaining ingredients are not considered hazardous in accordance with the Globally Harmonized System (GHS)

Full text of H- and EUH-phrases: see section 16

Section 4: First aid measures

4.1 Description of first aid measures

General advice
Use first aid treatment according to the nature of the injury.

Skin Contact
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Eye contact
Flush eyes with water for at least 15 minutes. Get medical attention if eye irritation develops or persists.

Inhalation
Remove to fresh air, If symptoms persist, call a doctor.

Ingestion
Rinse mouth, Get medical attention.

Self-protection of the first aider
Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

4.2. Most important symptoms and effects, both acute and delayed

Main symptoms
Itching. Rashes.

4.3 Indication of any immediate medical attention and special treatment needed

Note to doctors
Treat symptomatically.

Section 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use CO2, dry chemical, or foam.

Unsuitable extinguishing media
Do not use a solid water stream as it may scatter and spread fire.

5.2 Special hazards arising from the substance or mixture.

Specific hazards arising from the chemical
Carbon dioxide (CO2), carbon monoxide (CO), oxides of nitrogen (NOx), dense black smoke.

Hazardous combustion products
Hazardous decomposition products due to incomplete combustion.

5.3 Advice for firefighters

Special protective equipment for fire-fighters
Wear self-contained breathing apparatus and protective suit, Wear personal protective equipment.

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions
Ensure adequate ventilation. Wear personal protective equipment.

For emergency responders
Use personal protection recommended in Section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so
Try to prevent the material from entering drains or water courses
Local authorities should be advised if significant spillages cannot be contained
See Section 12 for additional Ecological Information

6.3 Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

6.4. Reference to other sections

See section 13 for more information.

Section 7: HANDLING AND STORAGE

7.1 Precautions for safe handling.

Advice on safe handling
Ensure adequate ventilation

Protect from light

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice
Avoid breathing vapours, mist or gas
Wash hands before breaks and at the end of workday
Regular cleaning of equipment, work area and clothing is recommended
When using do not eat, drink or smoke
Contaminated work clothing should not be allowed out of the workplace

7.2 Conditions for safe storage, including any incompatibilities.

Technical measures and storage conditions
Keep container tightly closed in a dry and well-ventilated place
Protect from light
Store locked up

7.3 Specific end uses

Exposure scenario
No information available.

Risk Management Methods (RMM)
The information required is contained in this Material Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Exposure Limits

Chemical Name	Ireland	Norway	Poland	Portugal	Switzerland
2-Hydroxyethyl methacrylate 40 - 69		TWA 2 ppm TWA 11 mg/m³ A+ STEL 4 ppm STEL 16.5 mg/m³			S+
Acrylic acid 3 - <5	TWA 2 ppm TWA 6 mg/m³ STEL 6 ppm STEL 18 mg/m³	TWA 10 ppm TWA 30 mg/m³ STEL 15 ppm STEL 45 mg/m³	TWA 10 mg/m³ STEL 29.5 mg/m³	TWA 2 ppm C(A4) P*	SS-C** TWA 10 ppm TWA 30 mg/m³ STEL 10 ppm STEL 30 mg/m³
Silane Coupling Agent <1					S+

Chemical Name	Germany	The Netherlands	Austria	Italy	Spain
Acrylic acid 3 - <5	AGW 10 ppm AGW 30 mg/m³				TWA 2 ppm TWA 6 mg/m³ S*

Derived No Effect Level (DNEL)
No information available.

Predicted No Effect Concentration (PNEC)
No information available.

8.2 Exposure controls

Occupational exposure controls

Engineering Measures
Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction.

Hygiene Measures
When using do not eat, drink or smoke, Wash hands before eating, drinking or smoking, Avoid contact with skin, eyes or clothing.

Personal protective equipment

General Information
Use personal protective equipment in good condition.

Respiratory protection
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hand Protection
Nitrile rubber, Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Eye/face protection
Safety glasses with side-shields, If splashes are likely to occur, wear:, Goggles.

Skin and body protection
Long sleeved clothing, Apron, Impervious gloves.

Environmental Exposure Controls
Do not allow material to contaminate ground water system.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid (gel)		
Appearance	translucent	**Odour**	Characteristic
Colour	colourless to light yellow	**Odour threshold**	No information available

Property	**Values**	**Remarks • Method**
pH		No information available
Melting point / freezing point		No information available
Boiling point / boiling range		No information available
Flash point	101 °C / 214 °F	
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Flammability Limit in Air		
Upper flammability limit		No information available
Lower flammability limit		No information available
Vapour pressure		No information available
Vapour density		No information available
Specific Gravity		No information available
Water Solubility	Practically insoluble	
Solubility in other solvents		No information available
Partition coefficient: n-octanol/water		No information available
Autoignition temperature		No information available
Decomposition temperature		No information available
Dynamic viscosity	30,000 cP	
Kinematic viscosity		No information available
Explosive properties	No information available	
Oxidising properties	No information available	

9.2 Other Information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available

Density	No information available
Bulk density	No information available

Section 10: Stability and reactivity

10.1 Reactivity

Reactivity
None under normal use conditions.

10.2 Chemical stability

Stability
Stable under normal conditions

Explosion data

Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.

10.3 Possibility of Hazardous Reactions

Hazardous polymerisation
None under normal processing.

Hazardous Reactions
None under normal processing.

10.4 Conditions to avoid
Protect from light, Heat, flames and sparks.

10.5 Incompatible materials
Amines, Oxygen scavengers, Strong oxidising agents, Strong acids, Strong bases, Thiosulfates.

10.6 Hazardous Decomposition Products
None under normal use conditions.

Section 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product Information
Product does not present an acute toxicity hazard based on known or supplied information.

Inhalation	There is no data for this product.
Eye contact	There is no data for this product.
Skin Contact	There is no data for this product.
Ingestion	There is no data for this product.

Unknown acute toxicity

0% of the mixture consists of ingredient(s) of unknown toxicity.

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	8,837.00 mg/kg
ATEmix (dermal)	18,218.00 mg/kg
ATEmix (inhalation-dust/mist)	34.30 mg/l
ATEmix (inhalation-vapour)	173.00 mg/l

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
2-Hydroxyethyl methacrylate	= 5050 mg/kg (Rat)	> 3000 mg/kg (Rabbit)	
Acrylic acid	= 193 mg/kg (Rat) = 33500 µg/kg (Rat)	= 280 µL/kg (Rabbit) = 295 mg/kg (Rabbit)	= 5300 mg/m³ (Rat) 2 h
tert-Butyl Perbenzoate	= 4838 mg/kg (Rat)	= 3,817 mg/kg (Rabbit)	
Maleic Acid	= 708 mg/kg (Rat)	= 1560 mg/kg (Rabbit)	> 720 mg/m³ (Rat) 1 h
Photoinitator	>2000 mg/kg (Rat)		
Silane Coupling Agent	> 5000 mg/kg (Rat)		
Epoxy Resin	= 11400 mg/kg (Rat)		

Skin corrosion/irritation
No information available.

Serious eye damage/eye irritation
No information available.

Sensitisation
May cause sensitisation of susceptible persons.

Mutagenic effects
No information available.

Carcinogenic effects

Reproductive toxicity
No information available.

Target Organ Effects Respiratory system, EYES, Skin.

Aspiration hazard
No information available.

Section 12: Ecological information

12.1 Toxicity

Ecotoxicity
Harmful to aquatic life with long lasting effects

0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Acute aquatic toxicity

Product Information
Environmental product testing for acute and chronic aquatic effects determined classification to be Category 3

Component Information

Chemical Name	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates	Toxicity to algae
2-Hydroxyethyl methacrylate	LC50 = 227 mg/L 96 h (Pimephales promelas)	EC50 > 380 mg/l 48 h (Daphnia magna)	-
Acrylic acid	LC50 = 222 mg/L 96 h (Brachydanio rerio)	EC50 = 95 mg/L 48 h	EC50 0.04 mg/L 72 h (Desmodesmus subspicatus)
tert-Butyl Perbenzoate	LC50 1.6 mg/l 96 h (Brachydanio rerio)	EC50 11 mg/L 48 h (Daphnia magna)	EC50 1.3 mg/l 72 h (Pseudokirchneriella subcapitata)
Maleic Acid	LC50= 5 mg/L 96 h (Pimephales promelas)	EC50 250-400 48 h (Daphnia magna)	-

Photoinitator	LC50 6 mg/L 96 h (Lepomis macrochirus)	EC50 26 mg/L 48 h (Daphnia magna)	EC50 0.17 mg/L 72 h
Silane Coupling Agent	LC50 > 1024,00 mg/l 96 h (Brachydanio rerio)	EC50 > 876,00 mg/l 48 h (Daphnia magna)	EC50 > 536,00 mg/l 72 h (Scenedesmus subspicatus)
Epoxy Resin	-	EC50 = 1.4 mg/L 48 h (Daphnia magna)	-

12.2 Persistence and degradability
No information available.

12.3 Bioaccumulative potential

Chemical Name	log Pow
2-Hydroxyethyl methacrylate	0.47
Acrylic acid	0.46
tert-Butyl Perbenzoate	3
Maleic Acid	-0.79 - 0.32
Epoxy Resin	2.821

12.4 Mobility in soil
No information available.

12.5 Results of PBT and vPvB assessment
No information available.

12.6 Other adverse effects.
None

Endocrine Disruptor Information

Chemical Name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disruptors - Evaluated Substances
Epoxy Resin	Group III Chemical	-

Section 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste from residues / unused products
Should not be released into the environment, Dispose of in accordance with local regulations.

Contaminated packaging
Empty containers should be taken to an approved waste handling site for recycling or disposal, Dispose of as hazardous waste in compliance with local and national regulations.

Other Information
According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

Section 14: Transport information

IMDG/IMO
14.1 UN/ID no Not regulated
14.2 Proper shipping name Not regulated
14.3 Hazard Class Not regulated
14.4 Packing Group Not regulated
14.5 Marine pollutant Not applicable
14.6 Special Provisions None
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
No information available

ADR/RID

14.1 UN/ID no	Not regulated
14.2 Proper shipping name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing Group	Not regulated
14.5 Fish and tree	Not applicable
14.6 Special Provisions	None

ICAO/IATA

14.1 UN/ID no	Not regulated
14.2 Proper shipping name	Not regulated
14.3 Hazard Class	Not regulated
14.4 Packing Group	Not regulated
14.5 Fish and tree	Not applicable
14.6 Special Provisions	None

Section 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

WGK Classification
Water endangering class = 1 (self classification)

International Inventories

AICS	Not listed
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECI	Complies
PICCS	Not listed
NZIoC	Not listed
TCSI	Not listed
TSCA	Complies

Legend:

AICS - Australian Inventory of Chemical Substances
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
NZIoC - New Zealand Inventory of Chemicals
TCSI - Taiwan Chemical Substance Inventory
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

15.2 Chemical Safety Assessment
No information available

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under section 3
H220 - Extremely flammable gas
H226 - Flammable liquid and vapour
H242 - Heating may cause a fire
H302 - Harmful if swallowed
H312 - Harmful in contact with skin

H314 - Causes severe skin burns and eye damage
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H331 - Toxic if inhaled
H332 - Harmful if inhaled
H335 - May cause respiratory irritation
H340 - May cause genetic defects
H350 - May cause cancer
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects
H411 - Toxic to aquatic life with long lasting effects
H412 - Harmful to aquatic life with long lasting effects

Legend

SVHC: Substances of Very High Concern for Authorisation:

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA:	time weighted average	**STEL:**	Short term exposure limit
Ceiling:	Maximum limit value:	**S***	Skin designation

Revision Date 2017-11-21

Revision Note Not applicable.

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

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