COVALENT CHEMICAL

MSDS (MATERIAL SAFETY DATA SHEET)

PRODUCT	
MAA	

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

A. PRODUCT NAME: MAA

B. APPLICATION: Cement Fluidization Material, Fiber Materials, Adhesives, Paint, MAA ester, UP Resin

C. COMPANY IDENTIFICATION

Covalent Chemical
6501 Creedmoor Rd.Suite 207
Raleigh, NC 27613

2. HAZARDS IDENTIFICATION

A. GHS CLASSIFICATION

PHYSICAL HAZARDS

Explosives: Not Classified.
Flammable gases: Not Classified.
Flammable aerosols: Not Classified.
Oxidizing gases: Not Classified.
Gasses under pressure: Not Classified.
Flammable liquids: Combustible liquid (Category 4).
Flammable solids: Not Classified.
Self-reactive substances: Not Classified.
Pyrophoric liquids: Not Classified.
Pyrophoric solids: Not Classified.
Self-heating substances: Not Classified.
Substances which, in contact with water, emit flammable gases: Not Classified.
Oxidizing liquids: Not Classified.
Oxidizing solids: Not Classified.
Organic peroxides: Not Classified.
Corrosive to metals: Not Classified.

HEALTH HAZARDS

Acute toxicity (Oral): Harmful if swallowed (Category 4).
Acute toxicity (Skin): Toxic in contact with skin (Category 3).
Acute toxicity (Inhalation (Gas or Vapor or Dust/mist/fume)): Not Classified.
Skin corrosion/irritation: Causes severe skin burns and eye damage (Category 1A).
Serious eye damage/eye irritation: Causes serious eye damage (Category 1).
Sensitization (Respiratory): Not Classified.
Sensitization (Skin): Not Classified.
Germ cell mutagenicity: Not Classified.
Carcinogenicity: Not Classified.
Reproductive toxicity: Not Classified.
Specific target organ systemic toxicity (Single exposure): May cause respiratory irritation (Category 3).
Specific target organ systemic toxicity (Repeated exposure): Causes damage to the following organs through prolonged or repeated exposure – Respiratory system, liver, kidney and adrenals (Category 1).
Aspiration hazard: Not Classified.

ENVIRONMENTAL HAZARDS

Hazards to the aquatic environment (Acute): Harmful to aquatic life (Category 3).
Hazards to the aquatic environment (Chronic): Not Classified.

B. WARNING LABELS, PICTOGRAMS, HAZARD STATEMENT AND PREVENTIVE MEASURE STATEMENTS

PICTOGRAMS

SIGNAL WORD: **DANGER.**

HAZARD STATEMENTS

Combustible liquid.
Harmful if swallowed.
Toxic in contact with skin.
Causes severe skin burns and eye damage.
Causes serious eye damage.
May cause respiratory irritation.
Causes damage to the following organs through prolonged or repeated exposure
– Respiratory system, liver, kidney and adrenals
Harmful to aquatic life.

PRECAUTIONARY STATEMENTS

PREVENTION

(Physical hazards)

Keep away from flames and hot surfaces.

(Health hazards)

Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Wear protective gloves and eye/face protection as specified by the manufacturer/supplier or the competent authority.

Wear protective gloves/clothing and eye/face protection as specified by the manufacturer/supplier or the competent authority. Wash thoroughly after handling. Do not breathe dust or mist - if inhalable particles may occur during use.

Wear eye/face protection as specified by the manufacturer/supplier or the competent authority.

Use only outdoors or in well-ventilated area. Avoid breathing dust/fume/gas/mist/vapors/spray.

(Environmental hazards)

Avoid release to the environment
- if this is not the intended use.

RESPONSE

(Physical hazards)

In case of fire, use foam, powder or carbon dioxide for extinction appropriate media specified by the manufacturer/supplier or the competent authority

(Health hazards)

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.

Remove/Take off immediately all contaminated clothing. IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTRE or doctor/physician if you feel unwell. Wash/Decontaminate removed clothing before reuse.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

Immediately call a POISON CENTER or doctor/physician.

STORAGE

(Physical hazards)

Store in cool/well-ventilated place.

(Health hazards)

Store locked up.

Store container tightly closed in well-ventilated place.
- if product is as volatile as to generate hazardous atmosphere.

DISPOSAL
Dispose of contents/container in accordance with local/regional/national/international regulation.

C. HAZARDS NOT INCLUDED IN GHS CLASSIFICATION
The vapor mixes well with air, explosive mixtures are easily formed. The substance may polymerize readily due to heating or under the influence of light, oxidizing agents such as peroxides, or in the presence of traces of HCl, with fire or explosion hazard *[ICSC]*.
Uninhibited monomer vapor may form polymer in vents and other confined spaces *[NFPA].*

3. COMPOSITION / INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS No.	ENCS Number*	%(w/w)
Methacrylic acid (MAA)	79-41-4	2-1025	> 99.9

* ENCS Number: Japanese Existing and New Chemical Substances.

4. FIRST AID MEASURES

A. EYE CONTACT
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.

B. SKIN CONTACT
Remove/take off immediately all contaminated clothing. Rinse skin with water/shower or wash with plenty of soap and water. If skin irritation or rash occurs, seek medical advice/attention. Wash contaminated clothing before reuse.

C. INHALATION
If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms or feel unwell, call a POISON CENTER or doctor/physician.

D. INGESTION
Not a likely route of exposure. Do not induce vomiting without medical advice. There may be irritation to the gastro-intestinal tract with nausea and vomiting.

E. MAJOR TOXIC SYMPTOMS AND EFFECTS
The signs and symptoms of acute exposure to MAA include irritation of the eyes and skin, corneal burns, and possible blindness *[ACGIH 1991]*.

F. NOTE TO PHYSICIAN
Skin contact may aggravate an existing dermatitis condition. Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

5. FIRE FIGHTING MEASURES

A. SUITABLE EXTINGUISHING MEDIA
AFFF, alcohol-resistant foam, powder, carbon dioxide *[ICSC]*.
Do NOT use straight streams of water. Water spray may be used to keep fire exposed containers cool.

B. SPECIFIC HAZARDS ARISING FROM THE CHEMICAL
Above flash point, vapor-air mixtures are explosive within flammable limits noted Section 9 (Physical and chemical properties). Polymerization may be caused by elevated temperature, oxidizers, peroxides, or sunlight. Vapors can flow along surfaces to distant ignition source and flash back. Sealed containers may rupture when heated. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

C. SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHTERS
In case of fire, wear a full face positive-pressure self contained breathing apparatus and protective suit. Keep containers cool with water spray.

6. ACCIDENTAL RELEASE MEASURES

A. PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES
Eliminate all ignition sources. Restrict access to area as appropriate until clean-up operations are complete. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection). Stop or reduce any leaks if it is safe to do so. Ventilate spill area if possible. Ensure clean-up is conducted by trained personnel only. Do not touch spilled material. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Notify appropriate government, occupational health and safety and environmental authorities.

B. ENVIRONMENTAL PRECAUTIONS
Prevent material from entering sewers or waterways. Notify appropriate government, occupational health and safety and environmental authorities.

C. METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP
SMALL SPILLS: Soak up spill with absorbent material (sand or other non combustible adsorbent material). Place residues in a suitable, covered, properly labeled container. Wash affected area.
LARGE SPILLS: Contain liquid using absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Clean contaminated surfaces with water or aqueous cleaning agents. Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

7. HANDLING AND STORAGE

A. PRECAUTIONS FOR SAFE HANDLING
Do not get in eyes, on skin, on clothing. Do not take internally. Use with adequate ventilation. Do not breathe vapors/gases/dust. In case of inadequate ventilation wear respiratory protection. Keep the containers closed when not in use. Use non-sparking type tools and equipment, including explosion proof equipment. Use connections properly earthed to prevent generation of electrostatic charges. Vapours are heavier than

air and may travel considerable distances to a source of ignition and flash back. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Ensure all containers are labelled. Do not use, store, spill or pour near heat, sparks or open flame.
MAA polymerizes at increased temperatures, and in the case of contact with radical donors (e.g. peroxides and azo compounds). Uncontrolled exothermic polymerization in closed systems might lead to explosion caused by increasing pressure *[EU-RAR No.25 (2002)]*.

B. CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES
Store in suitable labelled containers. Store the containers tightly closed. Store away from heat and sources of ignition. Protect from direct sunlight. Keep containers placed in cool, well–ventilated areas. Have appropriate fire extinguishers available in and near the storage area. Store separately from incompatibles.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. OCCUPATIONAL EXPOSURE LIMITS

KOREA

Korea. OELs (ISHL Article 42; MOL Public Notice No. 1986-45, as amended through MOL Public Notice No. 2007-25, June 8, 2007)

CAS RN: 79-41-4
Name: Methacrylic acid
The 8-hour TWA: 20 ppm.
The 8-hour TWA: 70 mg/m3
The 15-minute : -
The 15-minute STEL: -

JAPAN

Japan. OELs - JSOH (Japan Society of Occupational Health: Recommendation of Occupational Exposure Limits, 2007)

CAS RN: 79-41-4
Name: Methacrylic acid
Not established exposure limit.

OSHA

OSHA Table Z-1 Limits for Air Contaminants (June 30, 1993)(29 CFR 1910.1000)(1971 Permissible Exposure Limits (PELs))

CAS RN: 79-41-4
Name: Methacrylic acid
OSHA TWA: 20 ppm.
OSHA TWA:70 mg/m3.

ACGIH

ACGIH Threshold Limit Values (2007)

CAS RN: 79-41-4
Name: Methacrylic acid
The 8-Hour Exposure Limit (TLV-TWA): 20 ppm.

NIOSH

NIOSH. Pocket Guide to Chemical Hazards, 2005

CAS RN: 79-41-4
Name: Methacrylic acid
NIOSH Skin designation
NIOSH Recommended exposure limit (REL) [for up to a 10-hour workday during a 40-hour workweek]: 20 ppm.
NIOSH Recommended exposure limit (REL) [for up to a 10-hour workday during a 40-hour workweek]: 70 mg/m3.
NIOSH Immediately dangerous to life or health (IDLH) concentration: Not determined.

B. ENGINEERING MEASURES

General ventilation is recommended. Use local exhaust ventilation if necessary to control airborne mist and vapor. Provide mechanical ventilation of confined spaces.

C. INDIVIDUAL PROTECTION MEASURES

GENERAL ADVICE
The use and choice of personal protection equipment is related to the hazard of the product, the workplace and the way the product is handled. In general, we recommend as a minimum precaution that safety glasses with side-shields and work clothes protecting arms, legs and body be used. In addition any person visiting an area where this product is handled should at least wear safety glasses with side-shields.

RESPIRATORY PROTECTION
Where concentrations in air may exceed the limits given in this section, the use of a half face filter mask or air supplied breathing apparatus is recommended. If significant mists, vapors or aerosols are generated an approved respirator is recommended. A suitable filter material depends on the amount and type of chemicals being handled. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

HAND PROTECTION
All vinyl gloves appeared to provide poorer protection. Gloves should be replaced immediately if signs of degradation are observed. Most glove materials are of low chemical resistance. Consult PPE manufacturers. Replace gloves regularly.
The resistance of various materials to permeation by MAA is shown below: *[OSHA]*

Material Breakthrough	time (hr)
Butyl rubber	> 8
Viton	> 8
4H (PE/EVAL)	> 8
Natural rubber	< 1 (Not recommended. Degradation may occur*)
Neoprene	< 1 (*)
Nitrile rubber	< 1 (*)
Polyvinyl alcohol	< 1 (*)
Polyvinyl chloride	< 1 (*)

SKIN PROTECTION
When handling this product, the use of a chemical resistant suit and rubber boots is recommended. Keep a safety shower available.

EYE PROTECTION
When handling this product, the use of splash chemical goggles or face shields is recommended. Keep an eye wash fountain available.

9. PHYSICAL AND CHEMICAL PROPERTIES

A. PHYSICAL APPEARANCE:	Clear, colorless liquid.
B. ODOR:	Penetrating odor.
C. ODOR THRESHOLD:	No data available.
D. pH:	1.2 – 2.0 (98 g/L water, 20°C) *[OECD SIDS]*
E. MELTING/FREEZING POINT:	16°C *[The Merck Index, II. Ed., Merck and Co., Inc., USA, 935 (1989) and ICSC]*
F. INITIAL BOILING POINT/BOILING POINT RANGE:	159 - 163°C *[ICI Acrylics, Cleveland, England, letter of 8th. Nov. 1993 and ICSC]*
G. FLASH POINT:	77°C (Open Cup) *[ICSC]*
H. EVAPORATION RATE:	No data available.
I. FLAMMABILITY (GAS, SOLID):	Not applicable.
J. UPPER AND LOWER EXPLOSION LIMITS:	1.6 – 8.8 *[ICSC]*
K. VAPOUR PRESSURE:	0.9 hPa (20°C) *[EU-RAR No.25 (2002)]*

L. SOLUBILITY:	89g/L (water, 25°C) *[Riddick (1984)]* *Sol in most organic solvents [HSDB]*
M. RELATIVE VAPOUR DENSITY:	2.97 (air=1) *[ICSC]*
N. SPECIFIC GRAVITY:	1.02 (water=1) *[ICSC and The Merck Index, II. Ed., Merck and Co., Inc., USA, 935 (1989)]*
O. n-OCTANOL/WATER PARTITION COEFFICIENT:	0.93 *[PHYSPROP Database,2005]*
P. AUTOIGNITION TEMPERATURE:	400°C *[ICI Acrylics, Cleveland, England, letter of 8th. Nov. 1993]*
Q. DECOMPOSITION TEMPERATURE:	No data available.
R. VISCOSITY:	1.3 mPa *[HSDB]*

10. STABILITY AND REACTIVITY

A. CHEMICAL STABILITY
Inhibited MAA is stable at room temperature for a limited storage period. Vapors are uninhibited and may form polymers in vents, causing stoppage. Polymerization may be caused by elevated temperature, oxidizers, peroxides, or sunlight.

B. POSSIBILITY OF HAZARDOUS REACTIONS
Polymerizes easily, especially on heating or in presence of traces of hydrochloric acid *[HSDB]*. The product is readily polymerized by light, heat, or oxidants without inhibitor.

C. CONDITIONS TO AVOID
Insufficient inhibitor, incompatibles, heat, flame and ignition sources.

D. INCOMPATIBLE MATERIALS
Contact with polymerization catalysts (e.g. peroxides, persulfates), hydrochloric acid, strong oxidizers and other bases (e.g. ammonia, amines).

E. HAZARDOUS DECOMPOSITION PRODUCTS
Oxides of carbon (COx).

11. TOXICOLOGICAL INFORMATION

A. INFORMATION ON THE LIKELY ROUTES OF EXPOSURE

EYE CONTACT: Yes.

SKIN CONTACT: Yes.

INGESTION: No.

INHALATION: Yes (vapor, mist).

B. SYMPTOMS RELATED TO THE PHYSICAL, CHEMICAL AND TOXICOLOGICAL CHARACTERISTICS
Human health (risks from physico-chemical properties)
MAA has no explosive or oxidizing properties due to structural reasons and is not highly flammable. Therefore with regard to the physico-chemical properties and with regard to the occupational exposure and consumer exposure, MAA is not expected to cause specific concern relevant to human health *[EU-RAR No.25 (2002)]*.

C. DELAYED AND IMMEDIATE EFFECTS AND ALSO CHRONIC EFFECTS FROM SHORT AND LONG TERM EXPOSURE

ACUTE TOXICITY:

- Oral: May cause weakness and rough haircoat, and severe gastric irritation depend on concentration based on animal test *[EU-RAR No.25 (2002)]*.

- Skin: May cause slight weight loss and severely burned skin after application of 500 mg/kg, 1,000 mg/kg and 2,000 mg/kg based on animal test.

- Inhalation: Mist or vapor produce severe irritation of respiratory tract. May cause weight loss, lung discoloration and bloody nasal discharge based on animal test.

SKIN CORROSION/IRRITATION:
MAA is a corrosive substance and contact will cause severe burns on skin. MAA causes adverse effects at the site of application, depending on the concentration and frequency or time of exposure *[EU-RAR No.25 (2002)].*

SERIOUS EYE DAMAGE/IRRITATION:
MAA is a corrosive substance and contact will cause severe burns eye. MAA causes adverse effects at the site of application, depending on the concentration and frequency or time of exposure *[EU-RAR No.25 (2002)]*.
Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract.

RESPIRATORY OR SKIN SENSITIZATION:
MAA is not expected to be a sensitizer on skin.
No information available on the potential for MAA to produce respiratory sensitization in animals.
MAA is not a sensitizing substance as demonstrated by human experience *[EU-RAR No.25 (2002)]*.

GERM CELL MUTAGENICITY:
Not expected to cause mutagenicity based on some mutagenicity assay.

CARCINOGENICITY:
No data available. However, data from studies concerning MMA, there is no concern on carcinogenic properties of MAA *[EU-RAR No.25 (2002)]*.

REPRODUCTIVE TOXICITY:
No data available. However, data from studies concerning MMA, there is no concern in relation to reproductive toxicity *[EU-RAR No.25 (2002)]*.

SPECIFIC TARGET ORGAN/SYSTEMIC TOXICITY – SINGLE EXPOSURE:
May cause respiratory irritation.

SPECIFIC TARGET ORGAN/SYSTEMIC TOXICITY – REPEATED EXPOSURE:
Causes damage to respiratory system through prolonged or repeated exposure.
Caused tachycardia, hypotonia, asymmetry of oscillatory index, excessive reaction to nitroglycerin, hypothermia, weakened reaction to heating, and ultraviolet exposure, pathologic changed reflexes of Ashner and location, acrocyanosis, tremor of extended fingers of the hands for the workers *[EU-RAR No.25 (2002)]*.

Caused hyporeflexia, changes of liver enzymes and electrolytes, erythropenia, decreased organ weights (liver, adrenals), dystrophic changes in liver, kidney and adrenals, no morphologic changes in CNS for the test animals *[IUCLID]*.

ENVIRONMENTAL HEALTH CRITERIA:
None known. No data available.

ASPIRATION HAZARD:
None known. No data available.

D. NUMERICAL MEASURES OF TOXICITY (SUCH AS ACUTE TOXICITY ESTIMATES)

ACUTE ORAL TOXICITY:

Species	LD50	Test Descriptor / Reference
Rat	1,320 mg/kg	*EU-RAR No.25 (2002)*
Rat	2,260 mg/kg	*EU-RAR No.25 (2002)*
Rat	1,060 mg/kg	*RTECS*
Mouse	1,250 mg/kg	*IUCLID*

ACUTE DERMAL TOXICITY:

Species	LD50	Test Descriptor / Reference
Rabbit	500 mg/kg	*RTECS*
Guinea pig	1,000 mg/kg	*RTECS*

ACUTE INHALATION TOXICITY:

Species	LC50	Test Descriptor / Reference
Rat	7.1 mg/L/4hrs	*OECD guideline 403 (1993)* *EU-RAR No.25 (2002)*

SKIN IRRITATION:
Rabbit, 0.5 ml, uncovered, 3 minutes, effect: Highly corrosive. Severe erythema and skin effects indicative of corrosivity (i.e. concave eschar and erosion/ulceration) were observed (GLP, OECD guideline 404) *[IUCLID, CERI report No. 92]*.

EYE IRRITATION:
Rabbit (Albino rabbit), 0.1 ml, effect: Highly irritating. Severe corneal, iridial and conjunctival effects *[IUCLID, CERI report No. 92]*.

MUTAGENICITY:
Salmonella typhimurium reverse mutation assay: 33 – 4,000 ug/plate (+-S9), result: negative *[IUCLID]*.
MAA is negative in a bacterial gene mutation test. Further testing on MAA is lacking. However, taking into consideration the data on the structurally related substance MMA - which indicate that MAA does not express a genotoxic potential in vivo *[EU-RAR No.25 (2002)]*.

SENSITIZATION:
Guinea pig (modified Buehler–test ; similar to OECD Guideline 406), 20% aqueous solution, result: Not skin sensitizing *[IUCLID and EU-RAR No.22 (2002)]*.

12 ECOLOGICAL INFORMATION

A. TOXICITY

ACUTE FISH RESULTS:

Species	Exposure	LC50	Test Descriptor / Reference
Brachydanio rerio	96 hrs	> 100 – 180 mg/L	GLP, OECD guideline 203
Oncorhynchus mykiss	96 hrs	85 mg/L	GLP, EPA guideline 660/ 3–75–009

ACUTE INVERTEBRATE RESULTS:

Species	Exposure	EC50	Test Descriptor / Reference
Daphnia magna (Crustacea)	24 hrs	> 100 – 180	GLP, OECD guideline 202
Daphnia magna (Crustacea)	48 hrs	> 130 (NOEC)	GLP, EPA guideline 660/3–75–009

AQUATIC PLANTS (e.g. ALGAE) RESULTS:

Species	Exposure	EC50	Test Descriptor / Reference
Scenedesmus quadricauda (Algae)	72 hrs	14 mg/L 9.8 (NOEC)	OECD Guideline 201 (1999)

B. PERSISTENCE AND DEGRADABILITY

MAA is stable in neutral solution and is classified as "readily biodegradable"
- Biodegradation: 91 % (14 days (BOD test)) *[Safety assessment for Existing Chemicals, JAPAN (2000)]*.

C. BIOACCUMULATIVE POTENTIAL
MAA is not expected to significantly bioaccumulation.

D. MOBILITY IN SOIL
Due to the high mobility of MAA in soils, a potential for leaching to groundwater has to be expected *[EU-RAR No.25 (2002)]*.

E. OTHER ADVERSE EFFECTS
No data available.

13. DISPOSAL CONSIDERATIONS

A. DISPOSAL METHODS
Must be disposed of as a special waste in accordance with regulations for special waste.
Small quantities may be incinerated under controlled conditions in incinerators suitable for methacrylates.
Hazardous wastes must be transported by a licensed hazardous waste transporter and disposed of or treated in a properly licensed hazardous waste treatment, storage, disposal or recycling facility.
Consult local, state, and federal regulations for specific requirements.

B. PRECAUTIONS (ON DISPOSAL OF COTAMINATED CONTAINERS AND PACKAGES)
Do not dispose of wastes in local sewer or with normal garbage. Combustion products are carbon monoxide, carbon dioxide and water.

14. TRANSPORT INFORMATION

* The following results are for the product.

A. UN NUMBER:	2531.
B. UN PROPER SHIPPING NAME:	METHACRYLIC ACID, STABILIZED.
* Technical Name(s)	-
C. TRANSPORT HAZARD CLASS(ES):	8 (Corrosive).
D. PACKING GROUP, IF APPLICABLE:	II.
E. ENVIRONMENTAL HAZARDS:	Not regulated.
F. SPECIAL PRECAUTIONS FOR USER:	No data available.

15. REGULATORY INFORMATION

SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS

EUROPE: This chemical substance is classified in the Annex I of Directive 67/548/EEC.
Hazard symbols:

Indication(s) of danger: C

Risk phrases:
R21/22: Harmful in contact with skin and if swallowed.
R35: Causes severe burns.

Safety phrases:
S1/2: Keep locked up and out of the reach of children.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.
S45: In case of accident or if you feel unwell, seek medical advice immediately.
(Show the label where possible.)

U.S. FEDERAL, ENVIRONMENT

Clean Air Act Section 111, SOCMI Intermediate or Final Volatile Organic Compounds (40 CFR 60.489)
CAS RN: 79-41-4
Name: METHACRYLIC ACID
Clean Air Act Section 112, Hazardous Air Pollutants, as amended by 40 CFR 63 (December 19, 2005)
Not regulated.
Hazardous Organic NESHAP (HON) Synthetic Organic Chemicals (40 CFR 63.100-.106, Table 1)
CAS RN: 79-41-4
Name: METHACRYLIC ACID
Hazardous Organic NESHAP (HON) Hazardous Air Pollutants (40 CFR 63.100-.106, Table 2)
Not regulated.
Clean Water Act Section 311 Hazardous Chemicals (40 CFR 116.4)
Not regulated.
Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)
Not regulated.
RCRA Appendix VII: Hazardous Constituents (40 CFR 261, App. VII, Basis for Listing Hazardous Waste)
Not regulated.
RCRA Appendix VIII List of Hazardous Constituents (40 CFR 261)
Not regulated.
RCRA D List of Characteristic Hazardous Wastes (40 CFR 261.21-24)
Not regulated.
NIOSH Recommended Safety and Health Standards for Hazardous Agents in the Workplace, Health Effects
Not regulated.

U.S. FEDERAL, RIGHT-TO-KNOW

CERCLA Hazardous Substances [other than radionuclides] (40 CFR 302.4)
Not regulated.
EPCRA (SARA Title III) Section 313 Toxic Chemical (Reporting Form R Instructions for 2006, as revised January 2007)
Not regulated.
HMIS Chemical Ratings (Hazardous Materials Information System, Chemical Ratings Guide, Third Edition, 2002)
Not regulated.
CPSC Banned & Regulated Substances in Consumer Products (Consumer Product Safety Commission, 16 CFR 1000-1750)
CAS RN: 79-41-4
Name: LIQUID HOUSEHOLD PRODUCTS CONTAINING METHACRYLIC ACID
CFR citation(s): 1700.14
Restriction (B=Banned; BF=Banned in Fireworks; L=Labeling; LR=Labeling & Reporting; SL=Special Labeling; SP=Special Packaging): SP

CANADA

Canada. WHMIS Ingredient Disclosure List (Can. Gaz., Part II, Vol.122, No.2, January 20, 1988)
CAS RN: 79-41-4
Name: METHACRYLIC ACID
Canada's WHMIS item number from English Ingredient Disclosure List: 994
Canada's WHMIS Concentration Threshold: 1 %.

Quebec. Guidance WHMIS Classifications (CSST/SRT), May 5, 2007
CAS RN: 79-41-4
Name: METHACRYLIC ACID
Classification: B3, D1B, E, F
Disclosure level: 1.0 %
Disclosure according to Ingredient Disclosure List

CHINA
China. List of Dangerous Goods (GB 12268-2005)
CAS RN: 79-41-4
Name: METHACRYLIC ACID, STABILIZED
UN Dangerous Goods Number(s) (UN Number): 2531
Dangerous Goods Classification(s): 8 (Corrosives)
Dangerous Goods Packing Group(s): II
China Dangerous Goods Number(s) (CN Number): 81618
China. Classification and Labeling of Dangerous Chemical Substances Commonly Used (GB 13690 - 92)
CAS RN: 79-41-4
Name: METHACRYLIC ACID, STABILIZED
Classification Section: Class 8: Corrosive Materials: Acidic corrosive material
Classification: Corrosives, Flammable
Dangerous Properties: 5.14, 5.48, 5.71, 5.94, 5.100, 5.104
Labeling: Primary label: Corrosive Material / Secondary label: Combustible Liquid.

KOREA
Korea. Dangerous Substances Threshold Quantity (Presidential Decree of Dangerous Substances Safety Management Act No. 18406, Schedule 1, May 29, 2004)
CAS RN: 79-41-4
Generics group name: No. 3 water-soluble petroleum liquids with a flash point of 70-200°C, excluding paints with 40 wt% or less combustible liquid.
Class: 4 (Flammable Liquids)
Threshold quantity: 4,000 liters

NATIONAL FIRE PROTECTION ASSOCIATION - NFPA Ratings (USA)

Health: 3, Flammability: 2, Reactivity: 2, Specific hazard: -
0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme

INTERNATIONAL CHEMICAL CONTROL LAWS

EUROPE
The substance in this product is included in or exempted from the EINECS or ELINCS inventories.

U.S.
The substance in this product are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710).

JAPAN
The substance in this product is comply with the Law Regulating the Manufacture and Importation of Chemical Substances and are listed on the Ministry of Economy, Trade and Industry (METI).

KOREA
The substance in this product is comply with the Toxic Chemical Control Law (TCCL) and is listed on the Existing Chemicals Inventory (KECI).
Toxic Chemicals List - None of the component of this product is regulated under TCCL.
Observational Chemicals List - None of the component of this product is regulated under TCCL.

16.	OTHER INFORMATION