

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifier

Product Name: BioSol-H460
Product Codes(s): BioSol-H460
Synonyms: Solvent blend
REACH Registration Number: No data available

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

General Use: Solvent for coatings, paints, inks, adhesives, cleaning
Uses advised against: None known

1.3 Details of the supplier and of the safety data sheet

Manufacturer/Distributor
 Liquiguard Technologies, Inc.
 5807 N. Andrews Way
 Fort Lauderdale, FL 33309 USA
 +1-954-556-0996

1.4 Emergency telephone number: +1-954-556-0996 (during business hours)

SECTION 2 - HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture

Product definition: Mixture
Classification (Regulation (EC) No 1272/2008)
 Flammable liquid, Category 2, [H225]

2.2 Label Elements

Labeling (Regulation (EC) No 1272/2008)

Hazard Symbols



Signal Word: Danger
Hazard Statement(s): H225 - Highly flammable liquid and vapor.

Precautionary Statements:

- [Prevention]**
 - P210 - Keep away from heat, sparks, open flames and hot surfaces. - No smoking.
 - P233 - Keep container tightly closed.
 - P240 - Ground and bond container and receiving equipment.
 - P241 - Use explosion-proof electrical ventilating, lighting and mixing equipment.
 - P242 - Use only non-sparking tools.
 - P243 - Take precautionary measures against static discharge.
 - P280 - Wear protective gloves, protective clothing and eye protection.
- [Response]**
 - P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
- [Storage]**
 - P370 + P378 - In case of fire: Use water fog, foam, dry chemical or carbon dioxide for extinction.
- [Disposal]**
 - P403 + P235 - Store in well-ventilated place. Keep cool.
 - P501 - Dispose of contents in accordance with national/local regulations.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Chemical characterization (preparation)

Proprietary mixture that consists of non-toxic components (>98%). The identities of the components are a trade secret (29 CFR 1910.1200(i)) and are available to the attending physician or paramedical personnel in case of emergency. Hazardous materials are listed below.

% by Weight	Ingredient	CAS Number	EC Number	Index Number	EC Classification
	Dimethyl Carbonate	616-38-6	210-478-4	607-013-00-6	F, R11

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to the health or the environment and hence require reporting in this section.

SECTION 4 - FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation: If product vapors cause respiratory irritation or distress, move the exposed person to fresh air immediately. If breathing is difficult or irregular, administer oxygen; if respiratory arrest occurs, start artificial respiration by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. If symptoms persist, seek medical attention immediately.

Eyes: Immediately flush eyes with large amounts of water for 15 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain immediate medical attention, preferably from an ophthalmologist.

Skin: Remove contaminated clothing. Wash affected area with soap and water. Wash contaminated clothing and shoes thoroughly before reuse.

Ingestion: Rinse mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

4.2 Most important symptoms and effects, both acute and delayed

Potential health symptoms and effects

Eyes: Redness. Mild irritation, itching and/or tearing may indicate eye exposure.

Skin: May cause mild skin irritation. Not expected to cause an allergic skin reaction. A single prolonged skin exposure is not likely to result in the material being absorbed in harmful amounts.

Inhalation: May cause respiratory irritation. May cause nausea, drowsiness, inebriation, unconsciousness and central nervous system depression. Vapors may cause dizziness or respiratory arrest.

Chronic: No information available.

SECTION 5 - FIRE FIGHTING MEASURES

5.1 Extinguishable media

Suitable methods of extinction: For small fires, use media such as "alcohol" foam, dry chemical or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water or water jets may be ineffective.

Unsuitable methods of extinction: For this substance no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Flammable liquid and vapor. Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air at ambient temperatures. Pay attention to flashback. Development of hazardous combustion gases or vapors is possible in the event of a fire. Symptoms of overexposure to these gases may not be apparent. Seek medical advice.

5.3 Advice for firefighters

Full protective equipment including self-contained breathing apparatus should be used. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat. If possible, firefighters should control run-off water to prevent environmental contamination.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear appropriate protective clothing designated in Section 8. Remove all sources of ignition. Ventilate the area.

6.2 Environmental precautions

Avoid dispersal of spilled material or run-off and prevent contact with soil and entry into drains, sewers or waterways. Risk of explosion.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind and pump off spills. Cover with a large quantity of inert absorbent. Collect product using non-sparking tools and place into approved container for proper disposal. Observe possible material restrictions (section 7.2 and 10.5). Clean contaminated area with soap and water.

6.4 Reference to other sections

For indications about waste treatment, see section 13.

SECTION 7 - HANDLING AND STORAGE

7.1 Precautions for safe handling

Observe label precautions. Wear all appropriate protective equipment specified in Section 8. Keep containers closed when not in use.

Advice on protection against fire and explosion

Keep away from heat, sparks and flame. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material.

7.2 Conditions for safe storage, including any incompatibilities

Store at a temperature range of +15° C to +25° C.

Keep in cool, dry, ventilated storage areas in closed containers. Transfer only to approved containers having correct labeling. Containers that have been opened should be carefully resealed and kept upright to prevent leakage. Do not take internally. Keep out of reach of children.

7.3 Specific end uses

Apart from the uses mentioned in section 1.2, no other specific uses are stipulated.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Contains no substances with occupational exposure values.

8.2 Exposure controls

Engineering Measures: Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. Use adequate ventilation. Local exhaust is preferable. Refer to section 7.1.

Individual protection measures: Wear protective clothing to prevent repeated or prolonged contact with product. Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the representative supplier.

Hygiene measures: Facilities storing or using this material should be equipped with an eyewash station and safety shower. Change contaminated clothing. Preventive skin protection is recommended. Wash hands thoroughly after use, before eating, drinking or using the lavatory.

Eye/face protection: Wear protective goggles or safety glasses with unperforated side shields during use. Refer to 29 CFR 1910.133, ANSI Z87.1 or European Standard EN 166.

Hand Protection: Wear gloves recommended by glove supplier for protection against materials in section 3. Gloves should be impermeable to chemicals and oil. Breakthrough time of selected gloves must be greater than the intended use period. Neoprene, nitrile rubber or butyl rubber gloves with cuffs are recommended.

Other protective equipment: Flame retardant, antistatic protective clothing.

Respiratory Protection: None required with normal use. Always use an approved respirator when vapor/aerosols are generated. Where risk assessment shows air-purifying respirators are appropriate use a full-faced respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Environmental exposure controls: Do not empty into drains. Risk of explosion.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Clear, colorless liquid
Odor	Mild
Odor Threshold	No data available
Molecular Weight	Not applicable
Chemical Formula	Not applicable
pH	Not determined
Freezing/Melting Point, Range	Not determined
Initial Boiling Point	90 °C (194 °F)
Evaporation Rate	>1 (n-BuAc =1)
Flammability (solid, gas)	Not applicable
Flash Point	32 °C (90 °F) estimate
Autoignition Temperature	Not determined
Decomposition Temperature	No data available
Lower Explosive Limit (LEL)	Not determined
Upper Explosive Limit (UEL)	Not determined
Vapor Pressure	Not determined
Vapor Density	>3
Specific Gravity	1.1416
Viscosity, Dynamic	Not determined
Solubility in Water	Slight
Partition Coefficient: n-octanol/water	< -0.5
Volatiles by Volume @ 70° F	100%

9.2 Other data

DMC was delisted by the US EPA as a VOC effective February 2009. As of November 2011 state level exemptions were approved in 45 states in the USA and approval in nearly completed in the remaining states. In California no blanket exemption exists for DMC as a VOC within the South Coast Air Quality Management District (SCAQMD). At this time it is best to confirm VOC status with the local air boards. DMC is VOC exempt by the European Economic Community (EEC).

SECTION 10 - STABILITY AND REACTIVITY

10.1 Reactivity

Vapors may form explosive mixture with air.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Reacts violently with oxidants and potassium tert-butoxide causing a fire hazard. The substance decomposes on burning producing irritating fumes.

10.4 Conditions to avoid

Air. Heat, flames and sparks.

10.5 Incompatible materials

Strong oxidizing agents, strong acids, strong bases

10.6 Hazardous decomposition products

Thermal decomposition products include oxides of carbon, hydrocarbons, fumes and smoke.

SECTION 11 - TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

No toxicity tests have been carried out for this product. Acute toxicity data was estimated based on the toxicity of the individual components in contained in this product.

Acute Oral Toxicity

Expected to have low acute oral toxicity

Acute inhalation toxicity

Expected to have low acute inhalation toxicity

Acute dermal toxicity

Expected to have low acute dermal toxicity

Skin irritation

None expected. May cause mild skin irritation in sensitive individuals.

Eye irritation

Causes eye irritation with direct contact. Irritation may be mild to moderate depending on substance amount and length of contact with eye.

Sensitization

Negative

Genotoxicity in vitro

Ames test - Result: Negative

Mutagenicity

Negative

Specific organ toxicity - single exposure

The substance or mixture is not classified as a specific target organ toxicant, single exposure.

Specific organ toxicity - repeated exposure

The substance or mixture is not classified as a specific target organ toxicant, repeated exposure.

Aspiration hazard

No data available

11.2 Further information

After repeated absorption of very large quantities: Nausea, inebriation, unconsciousness, respiratory arrest, changes in blood count.

No component of this product is present at levels greater than or equal to 0.1% is identified as a probable, possible, potential or confirmed carcinogen by ACGIH, IARC, NTP or OSHA.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12 - ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish

Expected to have low toxicity to aquatic organisms

12.2 Persistence and degradability

Biodegradability

OECD Test Guideline 301C. Readily biodegradable.

12.3 Bioaccumulation potential

Partition coefficient: n-octanol in water

log Pow: < -0.5 (calculated). Bioaccumulation is not expected.

12.4 Mobility in soil

Expected to have very high mobility in soil

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects

Additional ecological information

Do not allow material to run into surface waters, wastewater or soil.

SECTION 13 - DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

The generation of waste should be avoided or minimized whenever possible. Although this product is classified as non-hazardous under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261 this material and its container should be disposed of in a safe way as empty containers may contain product residue. Leave chemicals in original containers. No mixing with other waste. Handle unclean containers like the product itself. Incinerate in an approved facility. Do not incinerate closed container. Dispose of in accordance with the Directive 2008/98/EC as well as other national, federal, state/provincial and local laws and regulations.

Hazardous waste: The classification of this product may meet the criteria for a hazardous waste.

SECTION 14 - TRANSPORT INFORMATION

Note: Transportation information provided is for reference only. Customer is urged to consult 49 CFR 100 - 177, IMDG, IATA, EC, United Nations TDG and WHMIS (Canada) TDG information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.

U.S.A. DOT and Canadian TGD

Proper Shipping Name: Flammable Liquid, N.O.S. (Butyl acetate, ethanol)
Hazard Class: 3
UN/NA: 1993
Packing Group: II
NAERG: Guide #128
Packaging Authorization: Non-Bulk: 49 CFR 173.202; Bulk: 173.242
Packaging Exceptions: 49 CFR 173.150

**IMO/IMDG**

Proper Shipping Name: Flammable Liquid, N.O. S., (butyl acetate, ethanol)
Hazard Class: 3
UN/NA: 1993
Packing Group: II
Marine Pollutant: No
EMS Number: F-E, S-D

IAAO/IATA

Proper Shipping Name: Flammable Liquid, N.O. S., (Butyl acetate, ethanol)
Hazard Class: 3
UN/NA: 1993
Packing Group: II
Quantity Limitations: 49 CFR 175.27 and 175.75 - Cargo Aircraft Only: 60 L; Passenger Aircraft: 5 L

RID/ADR

Proper Shipping Name: Flammable Liquid, N.O. S., (Butyl acetate, ethanol)
Hazard Class: 3
UN/NA: 1993
Packing Group: II

Marine Pollutant: This product is not a marine pollutant.

SECTION 15 - REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for substance or mixture**U. S. Federal Regulations**

OSHA Hazard Communication Standard: This material is classified as hazardous in accordance with OSHA 29 CFR 1910-1200.

TSCA Status: All components of this product are listed on the Toxic Substance Control Act (TSCA) Inventory.

Superfund Amendments and Reauthorization Act (SARA)

SARA Section 311/312 Hazard Categories: Fire hazard.

SARA 313 Information: None of the chemicals in this product are subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to Know Act of 1986.

SARA 302/304/311/312 Extremely Hazardous Substance:

No components of the product are subject to the reporting requirements of these sections of Title III of SARA.

SARA 302/304 Emergency Planning & Notification:

No components of the product are subject to the reporting requirements of these sections of Title III of SARA.

Comprehensive Response Compensation and Liability Act (CERCLA): No components of this product are listed as hazardous substances.

Clean Air Act (CAA)

This product does not contain any chemicals that are listed as Hazardous Air Pollutants (HAPs) designated in CAA Section 112 (b).

This product does not contain any Class 1 Ozone depletors.

This product does not contain any Class 2 Ozone depletors.

Clean Water Act (CWA)

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

U.S. State Regulations**California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986:**

This product contains no chemical(s) known to the state of California to cause cancer or other reproductive harm.

Other U.S. State Inventories:

Dimethyl carbonate (CAS #616-38-6) is found on the following State Inventories or Right-to-Know lists: MA, NJ, PA.

Canada**WHMIS Hazard Symbol and Classification:**

B-2 - Flammable liquid with a flash point lower than 37.8° C (100° F)

Canadian Controlled Products Regulations (CPR): This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations, and the MSDS contains all the information required by the Controlled Products Regulations.

Canadian Ingredient Disclosure List (IDL): A proprietary component is listed on the IDL.

Canadian National Pollutant Release Inventory (NPRI): This material is not listed on the NPRI.

European Economic Community

Labeling (67/548/EEC to 1999/45/EC)



F - Flammable

Risk Phrases: R11 - Highly flammable
Safety phrases: S2 - Keep out of reach of children.
S9 - Keep container in a well ventilated place.
S16 - Keep away from sources of ignition.

WGK, Germany (Water danger/protection): Class 1 - Slightly hazardous to water.

Chemical inventory Lists

Country	Inventory Name	Inventory Listing*
Canada:	Domestic Substance List (DSL).	Yes
Canada:	Non-Domestic Substance List (NDSL).	No
Europe:	Inventory of New and Existing Chemicals (EINECS)	Yes
United States:	Toxic Substance Control Act (TSCA)	Yes
Australia:	Australian Inventory of Chemical Substances (AICS)	Yes
New Zealand:	New Zealand Inventory of Chemicals (NZIoC)	Yes
China:	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Japan:	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea:	Existing Chemicals List (ECL)	Yes
Philippines:	Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Yes

*"Yes" indicates that all components of this product are in compliance with the inventory requirements administered by the governing country.

**"No" indicates that one or more components of this product are not on the inventory and are not exempt from listing.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

SECTION 16 - OTHER INFORMATION

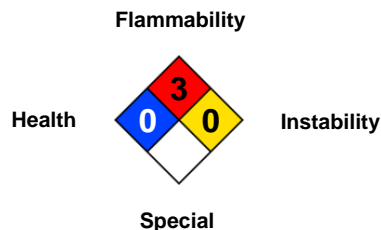
Hazardous Material Information System (HMIS)

Health	0
Flammability	3
Physical Hazard	0
Personal Protection	C

HMIS HAZARD RATING Legend

* = Chronic Health Hazard
0 = INSIGNIFICANT
1 = SLIGHT
2 = MODERATE
3 = HIGH
4 = EXTREME

National Fire Protection Association (NFPA)



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Revision

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