



SAFETY DATA SHEET

BIO-SOLV

SECTION 1: IDENTIFICATION

GHS PRODUCT IDENTIFIERS:

PRODUCT NAME: BIO-SOLV
SYNONYMS, TRADE NAMES: BIO-SOLV Solvent Replacement
OTHER MEANS OF IDENTIFICATION: Not available

RECOMMENDED USE OF THE CHEMICAL AND RESTRICTIONS ON USE:

USES: Cleaning Solvent, Degreaser
RESTRICTIONS ON USE: None Identified

SUPPLIER'S DETAILS:

MANUFACTURER/SUPPLIER: BIO BRANDS
275 Bridgepoint Way
South Saint Paul, MN 55075, USA
TELEPHONE: +1 651 451 8000
FACSIMILE: +1 651 451 9728

CONTACT PERSON: Eric Frank

EMERGENCY PHONE NUMBER:

CHEMTREC (24 HRS): USA 1 800 424 9300
CHEMTREC (24 HRS): INTERNATIONAL +1 703 527 3887

SECTION 2: HAZARDS IDENTIFICATION

GHS CLASSIFICATION OF SUBSTANCE OR MIXTURE:

Flammable Liquids: Category 3, H226
Skin Irritation: Category 2, H315
Eye Damage: Category 1, H318
Specific target organ toxicity, single exposure: Category 3, H335

GHS LABEL ELEMENTS:

HAZARD SYMBOLS:



SIGNAL WORDS:

Danger

HAZARD STATEMENTS:

H226 Flammable liquid and vapour.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.

PRECAUTIONARY STATEMENTS:

PREVENTION: P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof electrical, ventilating and lighting equipment.
P242 Use non-sparking tools.



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| RESPONSE: | P243 Take action to prevent static discharges. P261 Avoid breathing dust, gas, mist, vapors and spray. P264 Wash hands thoroughly after handling. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves, protective clothing, eye protection and face protection. P303+P361+P353+P352 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Wash with plenty of soap and water. P332+P313 If skin irritation occurs: Get medical advice/attention. P363 Wash contaminated clothing before reuse. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P312 Call a POISON CENTER or doctor/physician if you feel unwell. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER or doctor/physician. P370+P378 In case of fire: Use water fog, carbon dioxide or dry chemical to extinguish. |
| STORAGE: | P403+P233+P235 Store in a well-ventilated place. Keep container tightly closed. Keep cool. P405 Store locked up. |
| DISPOSAL: | P501 Dispose of contents and containers in accordance with local, regional and international regulations. |

Precautionary statements are listed according to the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS) – Annex III

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

| CHEMICAL NAME: | CAS NUMBER: | CONTENT: |
|------------------------|-------------|----------|
| Ethyl Lactate | 97-64-3 | <90% |
| Proprietary Co-Solvent | Proprietary | <90% |
| Inhibitor | Proprietary | <0.10% |

Amounts specified are typical and do not represent a specification. Remaining components are proprietary, non-hazardous, and/or present at amounts below reportable limits.

SECTION 4: FIRST-AID MEASURES

DESCRIPTION OF NESESARY FIRST-AID MEASURES:

| | |
|--------------------|---|
| INHALATION: | If affected, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention if breathing becomes difficult or respiratory irritation occurs. |
| SKIN: | Immediately remove contaminated clothing and shoes. Wash the affected area with plenty of soap and water until no evidence of the chemical remains (at least 15-20 minutes). Launder clothing before reuse. If irritation develops or persists, get medical attention. |
| EYES: | Immediately flush eyes with plenty of clean water for an extended time, not less than fifteen (15) minutes. Flush longer if there is any indication of residual chemical in the eye. Ensure adequate flushing of the eyes by separating the eyelids with fingers and roll eyes in a circular motion. Tilt head to avoid contaminating unaffected eye. Get immediate medical attention |



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INGESTION: If swallowed: Call a physician immediately. Do not induce vomiting unless directed to do so by a physician. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

MOST IMPORTANT SYMPTOMS AND EFFECTS, ACUTE AND DELAYED:

SYMPTOMS: Irritation. May cause: pain, tearing, redness, swelling and stinging of eyes. Pre-existing skin problems may be aggravated by prolonged or repeated contact. Prolonged or repeated contact with skin can cause defatting and drying of the skin, which may result in skin irritation and dermatitis. May irritate respiratory tract and cause shortness of breath if inhaled. May cause irritation of the mucous membranes if ingested. Aspiration of liquid may cause lung damage. See section 11 for additional information.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED, IF NECESSARY:

TREATMENT: Treat symptomatically.

SECTION 5: FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA:

SUITABLE: Use water fog, carbon dioxide or dry chemical.

UNSUITABLE: Solid stream of water (may spread the fire to a larger area).

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL:

UNUSUAL FIRE & EXPLOSION HAZARDS: COMBUSTIBLE LIQUID. Vapors are heavier than air. Vapors may settle in low or confined areas, or travel long distances along the ground or surface to an ignition source where they may ignite, flashback, or explode. Keep away from heat, sparks, flames or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment). Contact with strong oxidizing agents may cause fire. Rags soaked in solvent can present a fire hazard and should be stored in UL listed or Factory Mutual approved, covered containers. Improperly stored rags, under certain conditions can lead to spontaneous combustion. Forms peroxides of unknown stability if material becomes uninhibited. Violent steam generation or eruption may occur upon application of direct water stream to hot and burning liquids.

HAZARDOUS COMBUSTION PRODUCTS: Carbon oxides. See Section 10 Hazardous decomposition products for additional information.

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE-FIGHTERS: Evacuate area of unprotected personnel. Wear protective clothing including NIOSH-approved self-contained breathing apparatus. Remain upwind of fire to avoid hazardous vapors and decomposition products. Use water spray to cool-fire exposed containers and disperse vapors. See section 9 for additional information.

SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:

COMBUSTIBLE LIQUID. Eliminate all sources of ignition. Evacuate unprotected personnel from area. Maintain adequate ventilation. Follow personal protective equipment recommendations found in section 8. Never exceed any occupation exposure limit.

ENVIRONMENTAL PRECAUTIONS: Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs.



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METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP: Stop leak if without risk. Move containers from spill area. Contain spill, place into drums for proper disposal. Soak up residue with non-flammable absorbent material. Do not use sawdust or other cellulose-type material. Place in non-leaking containers for immediate disposal. Flush remaining area with water to remove trace residue and dispose of properly. Change contaminated clothing and launder before reuse.

SECTION 7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Do not swallow. Avoid breathing vapors, mists, or dust. Do not eat, drink or smoke in work area. Wash thoroughly after handling. Empty containers retains product residue (vapors, dust, or liquid) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other source of ignition. They may explode and cause injury or death. Use non-sparking tools and equipment.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES: COMBUSTIBLE LIQUID. Store in a cool, well ventilated area away from all sources of ignition and out of direct sunlight. Store in a dry location away from heat. Keep away from incompatible materials. Keep containers tightly closed. Do not store in unlabeled or mislabeled containers. Static electricity may accumulate and create a fire hazard. Ground fixed equipment. Bond or ground transfer containers and equipment. Protect containers against physical damage.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CONTROL PARAMETERS:

OCCUPATIONAL EXPOSURE LIMITS:

| INGREDIENT NAME: | CAS NUMBER | ACGIH-TWA | ACGIH-STEL |
|------------------------|-------------|---------------------|---------------|
| Ethyl Lactate | 97-64-3 | Not available | Not available |
| Proprietary Co-Solvent | Proprietary | Not available | Not available |
| Inhibitor | Proprietary | 2 mg/m ³ | Not available |

APPOPRIATE ENGINEERING CONTROLS: General room ventilation and local exhaust are required. Use explosion-proof ventilation equipment. Maintain adequate ventilation. Avoid creating dust or mist. Do not use in closed or confined spaces.

INDIVIDUAL PROTECTION MEASURES, SUCH AS PERSONAL PROTECTIVE EQUIPMENT (PPE):

| | |
|--------------------------------|---|
| EYE/FACE PROTECTION: | Wear chemical safety goggles while handling this product. |
| SKIN PROTECTION: | Prevent contact with this product. Wear gloves and protective clothing depending on condition of use. Protective gloves: impervious. |
| RESPIRATORY PROTECTION: | None required under normal use with adequate ventilation. If exposure limits are exceeded, wear: NIOSH-approved air purifying respirator or NIOSH-approved self-contained breathing apparatus. Do not exceed limits established by respirator manufacturer. All respiratory protection programs must comply with OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements, and must be followed whenever workplace conditions require a respirator's use. |
| GENERAL PROTECTION: | Eyewash fountains and safety showers are recommended in the work area. A rubber apron, chemical safety shoes and protective clothing are recommended. Wash with soap and water before meal times and at the end of each work shift. Good manufacturing practices require gross amounts of any chemical be removed |



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from skin as soon as practical, especially before eating or smoking. Handle in accordance with good industrial hygiene and safety practices.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---|-----------------------------|--|--------------------|
| APPEARANCE: | Liquid | UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS: | Not available |
| COLOR: | Colorless | VAPOUR PRESSURE: | 0.54 mm Hg at 20°C |
| ODOUR: | Mild ester odor | VAPOUR DENSITY: | 4.6 (air=1) |
| ODOUR THRESHOLD: | Not available | RELATIVE DENSITY: | 0.99 |
| PH: | 4.8 (10% solution) | SOLUBILITY(IES): | Partially |
| MELTING POINT/ FREEZING POINT | Not available | PARTITION COEFFICIENT (n-octanol/water): | Not available |
| INITIAL BOILING POINT AND BOILING RANGE: | 149°C | AUTO-IGNITION TEMPERATURE: | Not available |
| FLASH POINT: | 56°C | DECOMPOSITION TEMPERATURE: | Not available |
| EVAPORATION RATE: | 0.14 | VISCOSITY: | Not available |
| FLAMMABILITY (SOLID, GAS): | Not available | | |
| % VOLATILE BY WEIGHT: (ASTM D2369) | 100%, 990 g/L, 8.31 lbs/gal | | |

SECTION 10. STABILITY AND REACTIVITY

REACTIVITY: No data available.

CHEMICAL STABILITY: Stable under normal conditions.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur under normal conditions.

CONDITIONS TO AVOID: Avoid contact with heat, sparks, electric arcs, other hot surfaces, and open flames. Avoid other ignition sources. Avoid excess exposure to air. Do not allow to evaporate to near dryness. Do not distill to near dryness. Forms peroxides of unknown stability if material becomes uninhibited.

INCOMPATIBLE MATERIALS: Strong oxidizing agents. Strong acids. Strong bases.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide. Carbon dioxide.

SECTION 11. TOXICOLOGICAL INFORMATION

INFORMATION ON THE LIKELY ROUTES OF EXPOSURE: Eyes, skin, inhalation and ingestion.

SYMPTOMS RELATED TO THE PHYSICAL, CHEMICAL AND TOXICOLOGICAL CHARACTERISTICS:

| | |
|--------------------|---|
| EYES: | Causes mild to moderate irritation. May cause: pain, tearing, redness, swelling and stinging. |
| SKIN: | Causes mild to moderate irritation. Symptoms may include: itching. Prolonged and repeated contact with skin can cause defatting and drying of the skin, which may result in skin irritation and dermatitis. |
| INHALATION: | May cause moderate irritation. May irritate: respiratory tract. May cause: shortness of breath. Aspiration of liquid may cause lung damage. |
| INGESTION: | May cause mild to severe irritation. May cause irritation of the: mucous membranes. Aspiration can result in severe lung damage or death. |



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DELAYED AND IMMEDIATE EFFECTS AND ALSO CHONIC EFFECTS FROM SHORT AND LONG TERM EXPOSURE: Further information is not available.

ACUTE TOXICITY:

| CHEMICAL NAME | LC ₅₀ INHALATION | LD ₅₀ ORAL (RAT) | LD ₅₀ DERMAL (RABBIT) |
|------------------------|-----------------------------|-----------------------------|----------------------------------|
| Ethyl Lactate | Not available | >2,000 mg/kg | >5,000 mg/kg |
| Proprietary Co-Solvent | >998 ppm (6H Rat) | 4,309 mg/kg | 4,080 mg/kg |
| Inhibitor | Not available | 890 mg/kg | Not available |

CORROSION / IRRITATION / SENSITIZATION INFORMATION:

| | |
|---|-------------------------------|
| SKIN CORROSION/IRRITATION: | Skin Irritation – Category 2 |
| SERIOUS EYE DAMAGE/IRRITATION: | Eye Damage – Category 1 |
| RESPIRATORY OR SKIN SENSITIZATION: | Information is not available. |

CARCINOGENICITY / MUTAGENICITY / REPRODUCTIVE TOXICOLOGY INFORMATION:

| | |
|--------------------------------|-------------------------------|
| GERM CELL MUTAGENICITY: | Information is not available. |
| CARCINOGENICITY: | Information is not available. |
| REPRODUCTIVE TOXICITY: | Information is not available. |

SPECIFIC TARGET ORGAN TOXICITY (STOT):

| | |
|-------------------------------|--------------------------------|
| STOT-SINGLE EXPOSURE: | Category 3 (Respiratory Tract) |
| STOT-REPEATED EXPOSRE: | Information is not available. |

ASPIRATION HAZARD: Information is not available.

OTHER INFORMATION: Additional information is not available.

SECTION 12. ECOLOGICAL INFORMATION

TOXICITY:

| CHEMICAL NAME | TEST | SPECIES | RESULT |
|------------------------|---------------|---------|--------|
| Ethyl Lactate | Not available | | |
| Proprietary Co-Solvent | Not available | | |
| Inhibitor | Not available | | |

PERSISTENCE AND DEGRADABILITY:

| CHEMICAL NAME | TEST | PERIOD | RESULT |
|------------------------|--------------------------|--------|--------|
| Ethyl Lactate | Completely Biodegradable | | |
| Proprietary Co-Solvent | Completely Biodegradable | | |
| Inhibitor | Completely Biodegradable | | |

BIOACCUMULATIVE POTENTIAL:

| CHEMICAL NAME | Log P _{ow} | BCF | POTENTIAL |
|------------------------|---------------------|---------------|---------------|
| Ethyl Lactate | Not available | Not available | Not available |
| Proprietary Co-Solvent | Not available | Not available | Not available |
| Inhibitor | Not available | Not available | Not available |

MOBILITY IN SOIL:

| CHEMICAL NAME | SOIL/WATER PARTITION COEFFICIENT (K _{oc}) |
|---------------|---|
|---------------|---|



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Ethyl Lactate Not available
Proprietary Co-Solvent Not available
Inhibitor Not available

OTHER ADVERSE EFFECTS: Additional information is not available

SECTION 13. DISPOSAL CONSIDERATIONS

HAZARDOUS WASTE NUMBER: D001

DISPOSAL METHODS: Dispose of in permitted hazardous waste management facility following all local, state and federal regulations. Do not pressurize, cut, weld, solder, drill, grind or expose empty containers to heat, flame, sparks or other sources of ignition. See section 8 for recommendations on the use of personal protective equipment.

SECTION 14. TRANSPORTATION INFORMATION

U.S. DOT IDENTIFICATION NUMBER: NA1993

U.S. DOT PROPER SHIPPING NAME:

Combustible Liquid, N.O.S. (Contains Ethyl Lactate, Ethyl 3-Ethoxypropionate)

UN IDENTIFICATION NUMBER: UN1993

UN PROPER SHIPPING NAME:

Flammable Liquid, N.O.S. (Contains Ethyl Lactate, Ethyl 3-Ethoxypropionate)

TRANSPORT HAZARD CLASS:

| | |
|--|--------------------|
| U.S. DOT HAZARD CLASS: | Combustible Liquid |
| CANADA TDG HAZARD CLASS: | 3 |
| EUROPE ADR/RID HAZARD CLASS: | 3 |
| IMDG CODE (OCEAN) HAZARD CLASS: | 3 |
| ICAO/IATA (AIR) HAZARD CLASS: | 3 |

PACKING GROUP: III

ENVIRONMENTAL HAZARDS:

| | |
|-----------------------------------|----|
| MARINE POLLUTANT: | No |
| HAZARDOUS SUBSTANCE (USA): | No |

SPECIAL PRECAUTIONS FOR USER: Information is not available.

TRANSPORTING IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE:

Information is not available.

LABEL FOR CONVEYANCE:





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OTHER INFORMATION: In containers of 119 gallons or less this product is not regulated by the DOT. Label/Placard: exception 173.150(f) applies.

SECTION 15. REGULATORY INFORMATION

SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS SPECIFIC FOR THE PRODUCT IN QUESTION:

| | |
|--|------------------------------------|
| EU Regulation (EC) No. 1907/2006 (REACH) Annex XIV – List of substances subject to authorization, Substances of very high concern | None of the components are listed. |
| Annex XVII – Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles | None of the components are listed. |

OTHER REGULATIONS: Additional information is not available.

CHEMICAL INVENTORIES:

| | |
|--|---|
| Canadian Domestic Substances List (DSL): | Y |
| Canadian Non-Domestic Substances List (NDSL): | N |
| European Inventory of Existing Chemical Substances (EINECS): | Y |
| European List of Notified Chemical Substances (ELINCS): | N |
| U.S. Toxic Substances Control Act (TSCA): | Y |

A "Y" listing indicates all intentionally added components are either listed or are otherwise compliant with the regulation. A "N" listing indicates that for one or more components: 1) there is no listing on the public inventory; 2) no information is available; or 3) the component has not been reviewed.

SECTION 16. OTHER INFORMATION

REVISION DATE: May 29, 2015

LEGEND:

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|---|
| ACGIH: American Conference of Governmental Industrial Hygienists |
| ADR/RID: European dangerous goods transport road and rail regulations |
| CAS No: Chemical Abstract Service Registry Number |
| DOT: Department of Transportation (U.S.) |
| GHS: Globally Harmonized System of Classification and Labeling of Chemicals |
| IATA: International Air Transport Association |
| ICAO: International Civil Aviation Organization |
| IMDG: International Maritime Dangerous Goods code |
| OEL: Occupational Exposure Limits |
| OSHA: Occupational Safety and Health Administration (U.S.) |
| PEL: Permissible Exposure Limit |
| RQ: Reportable Quantity |
| SDS: Safety Data Sheet |
| STEL: Short Term Exposure Limit (15 minute Time Weighted Average) |
| TDG: Canadian Transportation of Dangerous Goods Act and Regulations |
| UN: United Nations |
| U.S.: United States |

USERS RESPONSIBILITY/DISCLAIMER OF LIABILITY:

As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local laws and local regulations remains the responsibility of the user.