

Material Safety Data Sheet



Glybet Surface and Air

1. Product and company identification

Product name : Glybet Surface and Air
Supplier : Betco Corporation
1001 Brown Avenue
Toledo, Ohio 43607
(800) 333-2156
Manufacturer : Betco Corporation
1001 Brown Avenue
Toledo, Ohio 43607
Code : 089
MSDS # : 089
Validation date : 5/8/2012.
Print date : 5/8/2012.
In case of emergency : Chemtrec (800) 424-9300
Product type : Aerosol.

2. Hazards identification

Emergency overview

Physical state : Liquid. [Compressed gas.]
Color : Clear.
Odor : Lemon-like.
Signal word : CAUTION!
Hazard statements : FLAMMABLE AEROSOL. CAUSES EYE IRRITATION. MAY CAUSE SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
Precautionary measures : Do not breathe vapor or mist. Do not eat, drink or smoke when using this product. Avoid contact with eyes, skin and clothing. Keep away from heat, sparks, open flames and hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Wash thoroughly after handling.

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Routes of entry : Dermal contact. Eye contact. Inhalation.

Potential acute health effects

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Ingestion : No known significant effects or critical hazards.
Skin : Slightly irritating to the skin.
Eyes : Severely irritating to eyes. Risk of serious damage to eyes.

Potential chronic health effects

Chronic effects : Contains material that may cause target organ damage, based on animal data.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

2. Hazards identification

Target organs : Contains material which may cause damage to the following organs: blood, kidneys, lungs, liver, heart, spleen, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.

Medical conditions aggravated by over-exposure : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

3. Composition/information on ingredients

Name	CAS number	%
Isopropanol	67-63-0	53
Isobutane	75-28-5	5 - 10
1,1-difluoroethane	75-37-6	5 - 10
Carbon dioxide	124-38-9	5 - 10
2,2'-(ethylenedioxy)diethanol	112-27-6	6

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

4. First aid measures

Eye contact Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately. In case of contact with eyes, rinse immediately with plenty of water.

Skin contact In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Inhalation Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion Wash out 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.

Protection of first-aiders No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

Flammability of the product : Flammable aerosol. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion. Bursting aerosol containers may be propelled from a fire at high speed. Runoff to sewer may create fire or explosion hazard.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

5. Fire-fighting measures

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
halogenated compounds
carbonyl halides
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. In the case of aerosols being ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. If a large number of containers are ruptured, treat as a bulk material spillage according to the instructions in the clean-up section. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up**
- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7. Handling and storage

- Handling** : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Empty containers retain product residue and can be hazardous.
- Storage** : Do not store above the following temperature: 48.889°C (120°F). Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

Ingredient	Exposure limits
Isopropanol	ACGIH TLV (United States, 2/2010). TWA: 200 ppm 8 hour(s). STEL: 400 ppm 15 minute(s). OSHA PEL 1989 (United States, 3/1989). TWA: 400 ppm 8 hour(s). TWA: 980 mg/m ³ 8 hour(s). STEL: 500 ppm 15 minute(s). STEL: 1225 mg/m ³ 15 minute(s). NIOSH REL (United States, 6/2009). TWA: 400 ppm 10 hour(s). TWA: 980 mg/m ³ 10 hour(s). STEL: 500 ppm 15 minute(s). STEL: 1225 mg/m ³ 15 minute(s). OSHA PEL (United States, 6/2010). TWA: 400 ppm 8 hour(s). TWA: 980 mg/m ³ 8 hour(s).
Isobutane	NIOSH REL (United States, 6/2009). TWA: 800 ppm 10 hour(s). TWA: 1900 mg/m ³ 10 hour(s). ACGIH TLV (United States, 2/2010). TWA: 1000 ppm 8 hour(s).
1,1-difluoroethane	AIHA WEEL (United States, 5/2010). TWA: 1000 ppm 8 hour(s).
Carbon dioxide	ACGIH TLV (United States, 2/2010). TWA: 5000 ppm 8 hour(s). TWA: 9000 mg/m ³ 8 hour(s). STEL: 30000 ppm 15 minute(s). STEL: 54000 mg/m ³ 15 minute(s). OSHA PEL 1989 (United States, 3/1989). TWA: 10000 ppm 8 hour(s). TWA: 18000 mg/m ³ 8 hour(s). STEL: 30000 ppm 15 minute(s). STEL: 54000 mg/m ³ 15 minute(s). NIOSH REL (United States, 6/2009). TWA: 5000 ppm 10 hour(s). TWA: 9000 mg/m ³ 10 hour(s). STEL: 30000 ppm 15 minute(s). STEL: 54000 mg/m ³ 15 minute(s). OSHA PEL (United States, 6/2010). TWA: 5000 ppm 8 hour(s). TWA: 9000 mg/m ³ 8 hour(s).

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

8. Exposure controls/personal protection

- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. <1 hours (breakthrough time): disposable vinyl
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. Recommended: safety glasses
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
- Personal protective equipment (Pictograms)** :



9. Physical and chemical properties

- Physical state** : Liquid. [Compressed gas.]
- Flash point** : Closed cup: <22.8°C (<73°F)
- Color** : Clear.
- Odor** : Lemon-like.
- pH** : 11.7
- Relative density** : 0.842
- Solubility** : Partially soluble in the following materials: cold water and hot water.
- Aerosol product**
- Type of aerosol** : Spray

10. Stability and reactivity

- Chemical stability** : The product is stable.
- Conditions to avoid** : Avoid all possible sources of ignition (spark or flame).
- Incompatible materials** : No specific data.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

11. Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Isopropanol	LD50 Dermal	Rabbit	12800 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-
Isobutane	LC50 Inhalation Vapor	Rat	658000 mg/m3	4 hours
2,2'-(ethylenedioxy)diethanol	LD50 Oral	Rat	15000 mg/kg	-

- Conclusion/Summary** : Not available.

11. Toxicological information

Chronic toxicity

Conclusion/Summary : Not available.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Isopropanol	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Eyes - Severe irritant	Rabbit	-	100 milligrams	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-
2,2'-(ethylenedioxy)diethanol	Eyes - Mild irritant	Rabbit	-	500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

Conclusion/Summary : Not available.

Sensitizer

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Isopropanol	A4	3	-	-	-	-

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

12. Ecological information

Ecotoxicity : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
Isopropanol	Acute LC50 1400000 ug/L Marine water	Crustaceans - Crangon crangon	48 hours
	Acute LC50 >1400000 ug/L	Fish - Gambusia affinis - 20 to 30 mm	96 hours
2,2'-(ethylenedioxy)diethanol	Acute LC50 35000 u/L Fresh water	Daphnia - Daphnia magna - <=24 hours	48 hours
	Acute LC50 >10000000 ug/L Marine water	Fish - Menidia beryllina - 40 to 100 mm	96 hours
	Chronic NOEC 7500 mg/L Fresh water	Daphnia - Daphnia magna - <24 hours	21 days
	Chronic NOEC 100 u/L Marine water	Fish - Cyprinodon variegatus - Egg	28 days

Conclusion/Summary : Not available.

Persistence/degradability

Conclusion/Summary : Not available.

13. Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	Not available.	Consumer commodity	ORM-D	-		Limited quantity Yes.
TDG Classification	Not available.	Product Not available.	2.1	-		-
Mexico Classification	Not available.	Consumer commodity ORM-D	2.1	-		-
ADR/RID Class	UN1950	AEROSOLS	2	-		Tunnel code (D)
IMDG Class	UN1950	AEROSOLS	2.1	-		-
IATA-DGR Class	UN1950	Aerosols, flammable	2.1	-		-

PG* : Packing group

15. Regulatory information

HCS Classification : Flammable aerosol
Irritating material
Target organ effects

U.S. Federal regulations : **TSCA 8(a) IUR Exempt/Partial exemption:** Not determined
United States inventory (TSCA 8b): Not determined.

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: Isopropanol; Isobutane; 2,2'-(ethylenedioxy)diethanol; 1,1-difluoroethane; Carbon dioxide

SARA 311/312 MSDS distribution - hazard identification:

Isopropanol: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; Isobutane: Fire hazard, Sudden release of pressure; 2,2'-(ethylenedioxy)diethanol: Immediate (acute) health hazard, Delayed (chronic) health hazard; 1,1-difluoroethane: Fire hazard, Sudden release of pressure, Delayed (chronic) health hazard; Carbon dioxide: Sudden release of pressure, Immediate (acute) health hazard

15. Regulatory information

hazard, Delayed (chronic) health hazard

Clean Air Act (CAA) 112 regulated flammable substances: Isobutane; 1,1-difluoroethane

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 313

	Product name	CAS number	Concentration
Form R - Reporting requirements	Isopropanol	67-63-0	40 - 60
Supplier notification	Isopropanol	67-63-0	40 - 60

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations

- Massachusetts** : The following components are listed: ISOPROPYL ALCOHOL; ISOBUTANE; CARBON DIOXIDE; DIFLUOROETHANE
- New York** : None of the components are listed.
- New Jersey** : The following components are listed: ISOPROPYL ALCOHOL; 2-PROPANOL; Isobutane; PROPANE, 2-METHYL-; CARBON DIOXIDE; CARBONIC ACID GAS; 1,1-DIFLUOROETHANE; ETHANE, 1,1-DIFLUORO-
- Pennsylvania** : The following components are listed: 2-PROPANOL; PROPANE, 2-METHYL-; CARBON DIOXIDE; ETHANOL, 2,2'-[1,2-ETHANEDIYLBIS(OXY)]BIS-
- Canada inventory** : Not determined.

International regulations

- International lists** :
- Australia inventory (AICS):** Not determined.
 - China inventory (IECSC):** Not determined.
 - Japan inventory:** Not determined.
 - Korea inventory:** Not determined.
 - New Zealand Inventory of Chemicals (NZIoC):** Not determined.
 - Philippines inventory (PICCS):** Not determined.

Chemical Weapons Convention List Schedule I Chemicals : Not listed

Chemical Weapons Convention List Schedule II Chemicals : Not listed

Chemical Weapons Convention List Schedule III Chemicals : Not listed

16. Other information

Label requirements : FLAMMABLE AEROSOL. CAUSES EYE IRRITATION. MAY CAUSE SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

Hazardous Material Information System (U.S.A.) :

Health	*	2
Flammability		4
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.) :



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

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Indicates information that has changed from previously issued version.

Notice to reader

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Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.