MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product number	SW050-005
Material name	**GLASS CLEANER**
Company information	Sprayway, Inc. SPRAYWAY INC 1005 S Westgate Dr
Company phone	ADDISON, IL 60101 United States
Emergency telephone US	
Emergency telephone outside US	1-952-852-4646
Version #	01
Supersedes date	07-12-2013

2. Hazards Identification

Emergency overview	WARNING CONTENTS UNDER PRESSURE. Aerosol. Pressurized container may explode when exposed to heat or flame. Prolonged exposure may cause chronic effects. May be ignited by heat, sparks or flames.
OSHA regulatory status	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Inhalation. Ingestion. Skin contact.
Eyes	Contact with eyes may cause irritation. Health injuries are not known or expected under normal use.
Skin	May be harmful if absorbed through skin. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Inhalation	Intentional misuse by concentrating and inhaling the product can be harmful or fatal. Prolonged inhalation may be harmful.
Ingestion	Exposure by ingestion of an aerosol is unlikely. Components of the product may be absorbed into the body by ingestion.
Target organs	Respiratory system. 2-Butoxy ethanol may be absorbed through the skin in toxic amounts if contact is repeated and prolonged and may cause blood damage. These effects have not been observed in humans.
Chronic effects	Unconsciousness. Edema. Jaundice. Cyanosis (blue tissue condition, nails, lips, and/or skin). May be harmful if absorbed through skin. Liver injury may occur. Pregnant women or women of child-bearing age should not be exposed to this product.
Signs and symptoms	Unconsciousness. Cyanosis (blue tissue condition, nails, lips, and/or skin). Liver enlargement. Jaundice. Skin irritation. Defatting of the skin. Rash.

3. Composition / Information on Ingredients

Components	CAS #	Percent
2-Butoxyethanol	111-76-2	2.5 - 10
Ethyl Alcohol	64-17-5	2.5 - 10
Butane	106-97-8	1 - 2.5
Propane	74-98-6	1 - 2.5
Other components below reportable levels		90 - 100

4. First Aid Measures

First aid procedures

Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops or persists. Get medical attention if irritation develops and persists.
Skin contact	Immediately take off all contaminated clothing. Immediately flush skin with plenty of water. Get medical attention if irritation develops and persists. For minor skin contact, avoid spreading material on unaffected skin. Wash clothing separately before reuse.
Inhalation	Move to fresh air. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician if symptoms develop or persist.
Ingestion	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth thoroughly. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
Notes to physician	In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General advice	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. IF exposed or concerned: Get medical advice/attention. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation.

5. Fire Fighting Measures

Flammable properties	Flammable by OSHA criteria. Vapor or gas may spread to distant ignition sources and flash back. Heat may cause the containers to explode. Runoff to sewer may cause fire or explosion hazard.
Extinguishing media	
Suitable extinguishing media	Water.
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.
Protection of firefighters	
Specific hazards arising from the chemical	Fire may produce irritating, corrosive and/or toxic gases.
Protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers. Containers should be cooled with water to prevent vapor pressure build up. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials. Move container from fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. In the event of fire and/or explosion do not breathe fumes. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. Accidental Release Measures

Personal precautions	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. For personal protection, see section 8 of the MSDS.
Environmental precautions	Do not contaminate water.
Methods for containment	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Prevent entry into waterways, sewer, basements or confined areas.

Methods for cleaning up

Should not be released into the environment. Stop the flow of material, if this is without risk. Isolate area until gas has dispersed. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the MSDS.

7. Handling and Storage

Handling

Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. All equipment used when handling the product must be grounded. Do not re-use empty containers. Do not get this material in contact with skin. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with eyes. Avoid prolonged exposure. Use only in area provided with appropriate exhaust ventilation.

Storage

Store locked up. Contents under pressure. The pressure in sealed containers can increase under the influence of heat. Do not expose to heat or store at temperatures above 120°F/49°C as can may burst. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Store in a well-ventilated place. Keep away from food, drink and animal feedingstuffs. Store away from incompatible materials (see Section 10 of the MSDS). Level 1 Aerosol (NFPA 30B)

8. Exposure Controls / Personal Protection

Occupational exposure limits

ACGIH Biological Exposure Indices

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	BEI	200 mg/g

US. ACGIH Threshold Limit Values

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	TWA	20 ppm
Ethyl Alcohol (CAS 64-17-5)	STEL	1000 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	PEL	240 mg/m3 50 ppm
Ethyl Alcohol (CAS 64-17-5)	PEL	1900 mg/m3 1000 ppm
Propane (CAS 74-98-6)	PEL	1800 mg/m3 1000 ppm

Engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal protective equipment

Eye / face protection

Face-shield.

Skin protection

Wear chemical protective equipment that is specifically recommended by the manufacturer.

Respiratory protection

If permissible levels are exceeded use NIOSH mechanical filter / organic vapor cartridge or an air-supplied respirator.

General hygiene considerations

When using do not smoke. Avoid contact with eyes. Avoid contact with skin. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical & Chemical Properties

Appearance

Clear.

Auto-ignition temperature

Not available.

Boiling point

212 °F (100 °C) estimated

Color	Colorless.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Flash point	-156.00 °F (-104.44 °C) Propellant estimated
Form	Aerosol.
Odor	Butyl
Odor threshold	Not available.
pH	9.5 - 10.5 estimated
Physical state	Gas.
Solubility (water)	Not available.
Specific gravity	0.961 estimated estimated
Vapor pressure	70 - 90 psig @ 70F estimated
Other data	
Heat of combustion	3.17 kJ/g estimated

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Heat, flames and sparks. Avoid temperatures exceeding the flash point.
Hazardous decomposition products	No hazardous decomposition products are known.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological Information

Toxicological data

Product	Species	Test Results
Gleme Glass Cleaner (CAS Mixture)		
Acute		
Dermal		
LD50	Rabbit	13586.2803 mg/kg, estimated
	Rat	7571 mg/kg
Inhalation		
LC50	Mouse	40423.0625 mg/l, 2 Hours, estimated
		24176.2793 mg/l, 7 Hours, estimated
		1313.3534 mg/l, 4 Hours, estimated
	Rat	79173.25 mg/l, 15 Minutes, estimated
		11122.5186 mg/l, 4 Hours, estimated
		75 mg/l/4h
Oral		
LD50	Dog	185.2165 g/kg, estimated
	Guinea pig	33.9778 g/kg, estimated
	Mouse	41.445 g/kg, estimated
	Rabbit	11.051 g/kg, estimated
	Rat	
		203.2327 g/kg, estimated
Other		
LD50	Mouse	12069.3428 mg/kg, estimated
	Rabbit	9670.5117 mg/kg, estimated

Product	Species	Test Results
	Rat	8031.8926 mg/kg, estimated

Components	Species	Test Results
2-Butoxyethanol (CAS 111-76-2)		
Acute		
Dermal		
LD50	Rabbit	400 mg/kg
Inhalation		
LC50	Mouse	700 mg/l, 7 Hours
	Rat	450 mg/l, 4 Hours
Oral		
LD50	Guinea pig	1.2 g/kg
	Mouse	1.2 g/kg
	Rabbit	0.32 g/kg
	Rat	560 mg/kg
Other		
LD50	Mouse	1130 mg/kg
	Rabbit	280 mg/kg
	Rat	340 mg/kg
Butane (CAS 106-97-8)		
Acute		
Inhalation		
LC50	Mouse	680 mg/l, 2 Hours
	Rat	658 mg/l, 4 Hours
Ethyl Alcohol (CAS 64-17-5)		
Acute		
Inhalation		
LC50	Mouse	39 mg/l, 4 Hours
	Rat	20000 mg/l, 10 Hours
Oral		
LD50	Dog	5.5 g/kg
	Guinea pig	5.6 g/kg
	Mouse	3450 mg/kg
	Rat	6.2 g/kg
Other		
LD50	Mouse	933 mg/kg
	Rat	1440 mg/kg
Propane (CAS 74-98-6)		
Acute		
Inhalation		
LC50	Rat	> 1442.847 mg/l, 15 Minutes
		658 mg/l/4h

* Estimates for product may be based on additional component data not shown.

Sensitization Not expected to be hazardous by OSHA criteria.

Acute effects Acute LD50: 7571 mg/kg, Rat, Dermal

Local effects Components of the product may be absorbed into the body through the skin. Blood disorder may occur after ingestion. Liver toxicity.

Chronic effects

Hazardous by OSHA criteria. Prolonged inhalation may be harmful. May be harmful if absorbed through skin.

2-Butoxy ethanol may be absorbed through the skin in toxic amounts if contact is repeated and prolonged. These effects have not been observed in humans.

Repeated absorption may cause disorder of central nervous system, liver, kidneys and blood. Prolonged exposure may cause chronic effects.

Subchronic effects

Blood disorder may occur after prolonged inhalation. Blood disorder may occur after ingestion. Blood disorder may occur after prolonged skin contact. Kidney injury may occur.

Carcinogenicity

Hazardous by OSHA criteria. Risk of cancer cannot be excluded with prolonged exposure.

ACGIH Carcinogens

2-Butoxyethanol (CAS 111-76-2)	A3 Confirmed animal carcinogen with unknown relevance to humans.
Ethyl Alcohol (CAS 64-17-5)	A3 Confirmed animal carcinogen with unknown relevance to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

2-Butoxyethanol (CAS 111-76-2)	3 Not classifiable as to carcinogenicity to humans.

Skin corrosion/irritation Not expected to be hazardous by OSHA criteria.

Epidemiology Hazardous by OSHA criteria.

Mutagenicity Not expected to be hazardous by OSHA criteria.

Neurological effects Not expected to be hazardous by OSHA criteria.

Reproductive effects Can cause adverse reproductive effects - such as birth defects, miscarriages, or infertility.

Teratogenicity Not expected to be hazardous by OSHA criteria.

Further information Symptoms may be delayed.

12. Ecological Information

Ecotoxicological data

Product		Species	Test Results
Gleme Glass Cleaner (CAS Mixture)			
Algae	IC50	Algae	11902 mg/L, 72 Hours
Crustacea	EC50	Daphnia	26428 mg/L, 48 Hours
Fish	LC50	Fish	36327 mg/L, 96 Hours
Components		**Species**	**Test Results**
2-Butoxyethanol (CAS 111-76-2)			
Aquatic			
Fish	LC50	Inland silverside (Menidia beryllina)	1250 mg/l, 96 hours
Ethyl Alcohol (CAS 64-17-5)			
Crustacea	EC50	Daphnia	11744.5 mg/L, 48 Hours
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	7.7 - 11.2 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	> 100 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Ecotoxicity

LC50: 36327 mg/L, Fish, 96.00 Hours
EC50: 26428 mg/L, Daphnia, 48.00 Hours
IC50: 11902 mg/L, Algae, 72.00 Hours
Components of this product have been identified as having potential environmental concerns.

Environmental effects An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Persistence and degradability Not available.

Bioaccumulation / Accumulation

Bioaccumulative potential

Octanol/water partition coefficient log Kow	
2-Butoxyethanol	0.83
Butane	2.89
Ethyl Alcohol	-0.31

Bioaccumulative potential

Octanol/water partition coefficient log Kow

Propane	2.36

Partition coefficient

2-Butoxyethanol	0.83
Butane	2.89
Ethyl Alcohol	-0.31
Propane	2.36

13. Disposal Considerations

Waste codes	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Incinerate the material under controlled conditions in an approved incinerator. Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Do not re-use empty containers.

14. Transport Information

DOT

Basic shipping requirements:

UN number	UN1950
Proper shipping name	Aerosols
Hazard class	2.1
Special precautions	Read safety instructions, MSDS and emergency procedures before handling.

Additional information:

Special provisions	153, N82
Packaging exceptions	LTD QTY
Packaging non bulk	None
Packaging bulk	None

This product meets the exception requirements of section 173.306 as a limited quantity and may be shipped as a limited quantity. Until 12/31/2013, the "Consumer Commodity - ORM-D" marking may still be used in place of the new limited quantity diamond mark for packages of UN 1950 Aerosols. Limited quantities require the limited quantity diamond mark on cartons after 12/31/13 and may be used now in place of the "Consumer Commodity ORM-D" marking and both may be displayed concurrently.

IATA

UN number	UN1950
UN proper shipping name	Aerosols, flammable
Transport hazard class(es)	2.1
Labels required	2.1
ERG code	10L
Special precautions for user	Read safety instructions, MSDS and emergency procedures before handling.
Packaging Exceptions	LTD QTY

IMDG

UN number	UN1950
UN proper shipping name	AEROSOLS
Transport hazard class(es)	2.1
Labels required	None
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.
Packaging Exceptions	LTD QTY

DOT

IATA; IMDG

15. Regulatory Information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Not listed.

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Not regulated.

DEA Exempt Chemical Mixtures Code Number

Not regulated.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA (Superfund) reportable quantity

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - Yes Pressure Hazard - Yes Reactivity Hazard - No
Section 302 extremely hazardous substance	No
SARA 311/312 Hazardous chemical	No

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

State regulations

US - New Jersey RTK - Substances: Listed substance

2-Butoxyethanol (CAS 111-76-2)	Listed.
Butane (CAS 106-97-8)	Listed.
Ethyl Alcohol (CAS 64-17-5)	Listed.
Propane (CAS 74-98-6)	Listed.

US. Pennsylvania RTK - Hazardous Substances

2-Butoxyethanol (CAS 111-76-2)	Listed.
Butane (CAS 106-97-8)	Listed.
Ethyl Alcohol (CAS 64-17-5)	Listed.
Propane (CAS 74-98-6)	Listed.

16. Other Information

Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

This data sheet contains changes from the previous version in section(s):

Product and Company Identification: Product Review
Composition / Information on Ingredients: Ingredients
Fire Fighting Measures: Specific methods
Accidental Release Measures: Personal precautions
Accidental Release Measures: Methods for cleaning up
Handling and Storage: Storage
Exposure Controls / Personal Protection: General hygiene considerations
Chemical Stability & Reactivity Information: Conditions to avoid
Disposal Considerations: Disposal instructions
Disposal Considerations: Waste from residues / unused products
Disposal Considerations: Contaminated packaging
Disposal Considerations: Waste codes