Living up to Life

Leica BIOSYSTEMS

Safety Data Sheet

Acid Alcohol 1%

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY

1.1 Product Identifier

Trade Name	**Acid Alcohol 1%**
Product #	3803650 3803651
SDS #	128
SDS Date	August 22, 2013

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Product Use:	Histology / Cytology and General use reagent, Differentiation
Uses Advised Against:	All other uses.

1.3 Details of the Supplier of the Substance or Mixture

Manufacturer/Preparer:	Leica Biosystems Richmond, Inc. 5205 Route 12 Richmond, IL 60071 800-225-8867	Leica Biosystems Canada, Inc. 83 Terracon Place Winnipeg, Manitoba R2J 4B3 800-665-7425

1.4 Emergency Telephone Number

Emergency Spill Information	1-800- 424-9300 (CHEMTREC) +1-703-527-3887 International calls (call collect)
Other Product Information:	1-800-225-8867

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the Substance or Mixture

CLP/GHS Classification (1272/2008):

Physical:	Health:	Environmental
Flammable Liquid Category 2 Corrosive to metals Category 1	Specific Target Organ Toxicity - Single Exposure Category 1	Not Hazardous

EU Classification (67/548/EEC): F, Xn, R11, R20/21/22, R68/20/21/22

2.2 Label Elements

DANGER! Contains methanol and hydrochloric acid.

Hazard Phrases

H225	Highly flammable liquid and vapour.
H370	Causes damage to nervous system and eyes.

H290	May be corrosive to metals

Precautionary Phrases

P210	Keep away from heat/sparks/open flames/hot surfaces. – No smoking
P233	Keep container tightly closed.
P234	Keep only in original container.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measure against static discharge.
P260	Do not breathe vapors.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves, protective clothing and eye protection.
P303 + P361 + P353	IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water.
P307 + P311	IF exposed: Call a POISON CENTER or doctor/physician.
P370 + P378	In case of fire: use dry chemical, foam or water spray for extinction.
P390	Absorb spillage to prevent material-damage.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P406	Store in corrosive resistant container with a resistant inner liner.
P501	Dispose of container/contents to approved disposal site in accordance with all local and national regulations.

2.3 Other Hazards: None

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical Name	CAS Number / EINECS Number / REACH Reg. Number	% (w/w)	EU Classification (67/548/EEC)	CLP/GHS Classification (1272/2008)
Ethanol	64-17-5 200-578-6	<65	F R11	Flammable Liquid Category 2 (H225)
Isopropanol	67-63-0 200-661-7	<5	F, Xi R11, R36, R67	Flammable Liquid Category 2 (H225) Eye Irritation Category 2A (H319) Specific Target Organ Toxicity – Single Exposure Category 3 (H336)
Methanol	67-56-1 200-659-6	<5	F, T R11, R23/24/25, R39/23/24/25	Flammable Liquid Category 2 (H225) Acute Toxicity Category 3 (H301, H311, H331) Specific Target Organ Toxicity – Single Exposure Category 1 (H370)
Hydrochloric acid	7647-01-0 231-595-7	<1	C, R34, R37	Skin Corrosive Category 1B (H314) Eye Damage Category 1 (H318) Specific Target Organ Toxicity – Single Exposure Category 3 (H335) Corrosive to metals Category 1 (H290) Aquatic Toxicity Acute Category 3 (H402)

See Section 16 for full text of GHS and EU Classifications.

SECTION 4: FIRST AID MEASURES

4.1 Description of First Aid Measures

First Aid

Eye contact: Immediately flush eye with water for at least 15 minutes while lifting the upper and lower lids. Get immediate medical attention.

Skin contact: Wash thoroughly with soap and water. Get medical attention if irritation develops. Remove contaminated clothing and launder before reuse.

Inhalation: Remove victim to fresh air. Get medical attention if irritation persists. If breathing is difficult have qualified individual administer oxygen and get immediate medical attention. If breathing stops, give artificial respiration and get immediate medical attention.

Ingestion: Do not induce vomiting unless directed to do so by medical personnel. If the victim is conscious and alert, have them rinse their mouth with water. Never give anything by mouth to an unconscious or drowsy person. Get immediate medical attention.

See Section 11 for more detailed information on health effects.

4.2 Most Important symptoms and effects, both acute and delayed: Causes severe eye and skin irritation; and burns. May cause respiratory irritation. Inhalation of vapors may cause abdominal pain and nervous system effects including dizziness, drowsiness, nausea, vomiting, visual disturbances and unconsciousness. Harmful or fatal if swallowed.

4.3 Indication of any immediate medical attention and special treatment needed: Immediate medical treatment is required for ingestion, and eye contact.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing Media:
Use dry chemical, alcohol-resistant foam, carbon dioxide (CO2), or water spray.

5.2 Special Hazards Arising from the Substance or Mixture
Unusual Fire and Explosion Hazards: Highly flammable liquid and vapor. Vapors are heavier than air and will travel along surfaces to remove ignition sources and flash back. Vapors will collect in low areas. Vapors may be ignited by static sparks. Flames may be invisible in daylight.
Combustion Products: Oxides of carbon, smoke, hydrogen chloride, chlorine.

5.3 Advice for Fire-Fighters: Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures:

Wear appropriate protective equipment. Eliminate all ignition sources and ventilate the area with explosion-proof equipment. Prevent entry into basements or confined areas.

6.2 Environmental Precautions:

Prevent entry in storm sewers and waterways. Report spill as required by local and federal regulations.

6.3 Methods and Material for Containment and Cleaning Up:

Stop spill at the source if it is safe to do so. Absorb with an inert material. Use non-sparking tools and equipment. Collect into a suitable container for disposal.

6.4 Reference to Other Sections:

Refer to Section 8 for personal protective equipment, and Section 13 for disposal information.

SECTION 7: HANDLING and STORAGE

7.1 Precautions for Safe Handling:

Prevent contact with eyes, skin and clothing. Avoid breathing vapors. Use only with adequate ventilation. Wash thoroughly after handling. Remove contaminated clothing and launder before re-use. Keep product away from heat, sparks and all other sources of ignition. Electrically bond and ground transfer equipment, Use appropriately rated electrical equipment in areas where this material is handled and stored. Keep containers closed when not in use.

7.2 Conditions for Safe Storage, Including any Incompatibilities:

Keep product away from heat, sparks and all other sources of ignition. Electrically bond and ground transfer equipment, Use appropriately rated electrical equipment in areas where this material is handled and stored.

Protect containers from physical damage. Store in a cool area. Keep away from excessive heat and open flames. Keep containers closed when not in use. Store away from oxidizers.

Empty containers retain product residues. Do not cut, weld, braze, etc. on or near empty containers. Follow all SDS precautions in handling empty containers

7.3 Specific end use(s):

Industrial uses: None identified
Professional uses: Histology / Cytology and General use reagent, Differentiation

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters:

Chemical Name	US OEL	EU IOEL	UK OEL	Germany OEL
Ethanol	1000 ppm TWA OSHA PEL 1000 ppm STEL ACGIH TLV	None Established	1000 ppm TWA	500 ppm TWA 1000 ppm STEL
Isopropanol	400 ppm TWA OSHA PEL 200 ppm TWA, 400 ppm STEL ACGIH TLV	None Established	400 ppm TWA, 500 ppm STEL	200 ppm TWA, 400 ppm STEL
Methanol	200 ppm TWA OSHA PEL 200 ppm TWA, 250 ppm STEL skin ACGIH TLV	200 ppm TWA skin	200 ppm TWA, 250 ppm STEL	200 ppm TWA, 800 ppm STEL

Hydrochloric acid	5 ppm Ceiling OSHA PEL 2 ppm Ceiling ACGIH TLV	5 ppm TWA, 10 ppm STEL	1 ppm TWA, 5 ppm STEL	2 ppm Ceiling

Refer to local or national authority for exposure limits not listed above.

Chemical Name	Biological Limit Value
Ethanol	None Established
Isopropanol	Acetone in urine 40 mg/L, end of shift at end of workweek (ACGIH)
Methanol	Methanol in urine 15 mg/L, end of shift (ACGIH)
Hydrochloric acid	None Established

8.2 Exposure Controls:

Recommended Monitoring Procedures: Collection on charcoal tubes with analysis by gas chromatography.

Appropriate Engineering Controls: Use with adequate local exhaust ventilation to maintain exposure levels below the occupational exposure limits. Use explosion-proof equipment where required.

Personal Protective Measures

Eye/face Protection: Wear chemical goggles.

Skin Protection: Impervious clothing as needed to prevent skin contact.

Hands: Impervious gloves recommended (butyl or nitrile rubber).

Respiratory Protection: None needed with adequate ventilation. If the occupational exposure limit is exceeded, use an approved supplied air respirator. Selection of respiratory protection depends on the contaminant type, form and concentration. Select in accordance with OSHA 1910.134 or other applicable regulations and good Industrial Hygiene practice.

Other protection: Suitable washing facilities should be available.

SECTION 9: PHYSICAL and CHEMICAL PROPERTIES

9.1 Information on basic Physical and Chemical Properties

Appearance: Clear liquid
Odor Threshold: 180 ppm Ethanol
Melting/Freezing Point: -112℃ (-169°F)
Flash Point: : 21.7 ℃ (71℉) (Closed Cup)
Lower Flammability Limit: 3.3%
Upper Flammability Limit: 19%
Vapor Density(Air=1): 1.6
Solubility: Soluble in water
Autoignition Temperature: 362°C (685℉)
Viscosity: Not established

Oxidizing Properties: None
Molecular Formula: Mixture

Odor: Alcohol odor
pH: 1.10 – 1.40
Boiling Point: 78.3°C (173℉)
Evaporation Rate: 2
Vapor Pressure: 44 mmHg @ 20℃

Relative Density: 0.79
Octanol/Water Partition Coefficient: Not available
Decomposition Temperature: Not established
Explosive Properties: Vapors may be explosive in confined areas.
Specific Gravity (H_2O= 1): 0.79
Molecular Weight: Mixture

9.2 Other Information: None available

SECTION 10: STABILITY and REACTIVITY

10.1 Reactivity: This material is reactive with oxidizing materials, metals, and bases.

10.2 Chemical Stability: Normally stable.

10.3 Possibility of Hazardous Reactions: Reaction with strong oxidizers will generate heat and may cause fire.

10.4 Conditions to Avoid: Avoid heat, sparks, flames, and all other sources of ignition.

10.5 Incompatible Materials: Oxidizing agents, metals, and bases.

10.6 Hazardous Decomposition Products: Thermal breakdown of this product during fire or very high heat conditions may evolve the following decomposition products: oxides of carbon, hydrogen chloride, chlorine.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects:

Potential Health Effects:

Eye Contact: May cause irritation with redness, pain, tearing and swelling.

Skin contact: May cause irritation and dryness. Repeated exposure may cause dermatitis. May be harmful if absorbed through the skin.

Inhalation: May cause respiratory tract irritation and central nervous system effects such as dizziness, drowsiness, nausea, vomiting, visual disturbances and unconsciousness.

Ingestion: Swallowing may cause gastrointestinal effects including abdominal pain, nausea and diarrhea and central nervous system effects including dizziness, drowsiness, nausea, vomiting, visual disturbances and unconsciousness. May cause permanent blindness.

Acute toxicity:

Ethanol: LD50 oral rat 7060 mg/kg; LC50 inhalation rat 20000 ppm/10 hr.
Acetic Acid: LD50 oral rat 3.31 g/kg, LD50 dermal rabbit 1060 mg/kg, LD50 inhalation rat 11.4 mg/kg/4 hr.
Isopropanol: LD50 oral rat 5045 mg/kg; LD50 dermal rabbit 12,800 mg/kg;
Hydrochloric acid: LD50 oral rat 238-277 mg/kg; LC50 inhalation rat 3124 ppm/1 hr; LD50 dermal mouse 1449 mg/kg

Skin corrosion/irritation: No data available for mixture. Components are damaging to skin.

Eye damage/ irritation: No data available for mixture. Components are damaging to eyes.

Respiratory Irritation: No data available for mixture. High concentrations of vapors may be irritating to the respiratory system.

Respiratory Sensitization: No data available for mixture. None of the components are respiratory sensitizers.

Skin Sensitization: No data available for mixture. None of the components are skin sensitizers.

Germ Cell Mutagenicity: No data available for mixture. None of the components are germ cell mutagens.

Carcinogenicity: No data available for mixture. None of the components of this product are listed as carcinogens by OSHA, ACGIH, IARC, NTP, or the EU Dangerous Substances Directive. Ingestion of alcoholic beverages is known to cause cancer in humans (IARC group 1).

Reproductive Toxicity: No data available for mixture. Ethanol is known to cause developmental toxicity when intentionally ingested during pregnancy.

Specific Target Organ Toxicity:

Single Exposure: Methanol has been found to cause visual and nervous system damage in studies with humans and animals. Hydrochloric acid mists are damaging to lungs in high concentrations.

Repeat Exposure: Ethanol when consumed as a beverage has been found to cause damage to the liver, nervous system and reproductive system.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity:

Ethanol: LC50 rainbow trout 13000 mg/L/96 hr; LC50 daphnia magna 9268-14221 mg/L/48 hr; EC50 Chlorella pyrenoidosa (Green algae; growth inhibition) 9310 mg/L/48 hr
Isopropanol: LC50 fathead minnows 11,130 mg/L/48 hr; LC50 brown shrimp 1400 mg/L/48 hr
Methanol: LC50 fathead minnows 29,400 mg/L/96 hr; EC50 daphnia magna >10,000 mg/L/24 hr
Hydrochloric acid: LC50 Oncorhynchus mykiss (Rainbow trout) 7.45 mg/L/96 hr

12.2 Persistence and degradability: Ethanol, methanol and isopropanol are readily biodegradable in screening tests. Hydrogen chloride dissociates readily in water to chloride and hydronium ions, decreasing the pH of the water

12.3 Bioaccumulative Potential: Ethanol and isopropanol have an estimated BCF of 3 and methanol an estimated BCF of <10, suggesting that the potential for bioaccumulation is low.

12.4 Mobility in Soil: Ethanol, methanol, and isopropanol are expected to have very high mobility in soil. Hydrogen chloride dissociates into chloride and hydronium ions in moist soil

12.5 Results of PVT and vPvB assessment: Not required.

12.6 Other Adverse Effects: Large releases may alter the pH of aquatic environment and damage aquatic life.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods:

Dispose in accordance with local, state and national regulations.

SECTION 14: TRANSPORTATION INFORMATION

	14.1 UN Number	14.2 UN Proper Shipping Name	14.3 Hazard	14.4 Packing	14.5 Environmental

			Class(s)	Group	Hazards
US DOT	UN2924	Flammable Liquids, Corrosive n.o.s. (ethanol, hydrochloric acid)	3, 8	II	No
Canadian TDG	UN2924	Flammable Liquids, Corrosive n.o.s. (ethanol, hydrochloric acid)	3, 8	II	No
EU ADR/RID	UN2924	Flammable Liquids, Corrosive n.o.s. (ethanol, hydrochloric acid)	3, 8	II	No
IMDG	UN2924	Flammable Liquids, Corrosive n.o.s. (ethanol, hydrochloric acid)	3, 8	II	No
IATA/ICAO	UN2924	Flammable Liquids, Corrosive n.o.s. (ethanol, hydrochloric acid)	3, 8	II	No

14.6 Special Precautions for User: None
14.7 Transport in Bulk According to Annex III MARPOL 73/78 and the IBC Code: Not determined.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

INTERNATIONAL INVENTORIES

EPA TSCA INVENTORY: All of the components are listed on the TSCA inventory.

CANADIAN ENVIRONMENTAL PROTECTION ACT: All of the ingredients are listed on the Canadian Domestic Substances List.

EUROPEAN UNION: All of the components of this product are listed on the European Inventory of New and Existing Chemical Substances (EINECS) inventory.

AUSTRALIA: All of the ingredients of this product are listed on the Australian Inventory of Chemical Substances (AICS).

CHINA: All of the ingredients are listed on the Chinese chemical inventory.

KOREA: All of the components of this product are listed on the Korean Existing Chemical List (KECL).

NEW ZEALAND: All of the components of this product are listed on the New Zealand Inventory of Chemicals (NzIoC).

PHILIPPINES: All of the components of this product are listed on the Philippine Inventory of Chemicals and Chemical Substances (PICCS).

JAPAN: All of the components of this product are listed on the Japanese Existing and New Chemical Substances List (ENCS).

U.S. REGULATIONS

OSHA HAZARD CLASSIFICATION: Flammable, Irritant, Target Organ Effects

EPA SARA 302: This product does not contain chemicals regulated under SARA Section 302.

CERCLA Section 103: The RQ for the product, based on the RQ for Methanol (5% maximum) of 5000 lbs, is 100,000 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

EPA SARA 311 HAZARD CLASSIFICATION: Acute Health, Chronic Health, Fire Hazard

EPA SARA 313: This product contains the following chemicals that are regulated under SARA Title III, section 313:
Methanol 67-56-1 <5%

CALIFORNIA PROPOSITION 65: This product contains the following chemicals which are known to the State of California to cause cancer, reproductive toxicity or birth defects (developmental toxicity): Methanol <5% (Reproductive).

INTERNATIONAL REGULATIONS

WHMIS CLASSIFICATION: Class B-2, Class D-2-B

SECTION 16: OTHER INFORMATION

Revision History: Updated Logo and website.

EU Classes and Risk Phrases for Reference (See Sections 2 and 3)
F Highly Flammable
T Toxic
Xi Irritant
Xn Harmful
C Corrosive
R10 Flammable
R11 Highly Flammable
R20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
R23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
R35 Causes severe burns
R36 Irritating to eyes.
R38 Irritating to skin.
R39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
R67 Vapours may cause drowsiness and dizziness.
R68/20/21/22 Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed

CLP/GHS Classification and H Phrases for Reference (See Section 3)
H225 Highly flammable liquid and vapour.
H301 Toxic if swallowed.
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H370 Causes damage to nervous system and eyes.
H402 Harmful to aquatic life

NFPA Rating:	Health: 2	Fire: 3	Instability: 0
HMIS Rating:	Health: 2	Fire: 3	Physical Hazard: 0

This Safety Data Sheet has been prepared in accordance with the REACH regulation in the EU and the Globally Harmonized System for the Classification and Labeling of Chemicals (GHS). It complies with the requirements of the Canadian Controlled Products Regulations and US 29CFR 1910.1200. To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries makes any warranty of merchantability or any other warranty, expressed or implied, which respect to such information, and we assume no liability resulting from its use. In no event shall Leica Biosystems be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages resulting from use of or reliance upon this information.