SILVER FERN CHEMICAL, INC.

SAFETY DATA SHEET

Isobutyl Acetate

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name: Isobutyl Acetate

Additional identification

Chemical name: 2-methylpropyl acetate
CAS-No.: 110-19-0

Relevant identified uses of the substance or mixture and uses advised against
Identified uses: Solvent
Uses advised against: None known.

Details of the supplier of the safety data sheet

Distributor
Silver Fern Chemical, Inc.
2226 Queen Anne Avenue North, Suite C
Seattle WA 98109, USA
Phone: 1-866-282-3384

Business Contact
Customer Service: 1-866-282-3384
info@silverfernchemical.com

Emergency telephone number:

24 Hour Emergency Contact
Infotrac 1-800-535-5053 (USA & Canada)
Outside USA & Canada 1-352-323-3500

SECTION 2: Hazards identification

Hazard classification:

Physical hazards

Flammable liquids	Category 2

Health hazards

Specific target organ toxicity - single exposure	Category 3

OSHA Specified Hazards: not applicable

Warning label items including precautionary statement:

Pictogram:

Signal words: Danger

Hazard Statement(s):
H225: Highly flammable liquid and vapor.
H336: May cause drowsiness or dizziness.

Precautionary statement:

Prevention:
P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233: Keep container tightly closed.
P240: Ground/bond container and receiving equipment.
P241: Use explosion-proof electrical/ventilating/lighting/equipment.
P242: Use only non-sparking tools.
P243: Take precautionary measures against static discharge.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P261: Avoid breathing dust/fume/gas/mist/vapors/spray.
P271: Use only outdoors or in a well-ventilated area.

Response:
P370+P378: In case of fire; Use water spray, carbon dioxide, dry chemical or alcohol foam for extinction.
P303+P361+P353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312: Call a POISON CENTER or doctor/physician if you feel unwell.

Storage:
P403+P233: Store in a well-ventilated place. Keep container tightly closed.
P235: Keep cool.
P405: Store locked up.

Disposal:
P501: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Hazard(s) not otherwise classified (HNOC): Prolonged or repeated skin contact may cause drying, cracking, or irritation.

SECTION 3: Composition/information on ingredients

Substances / Mixtures

General information:

Chemical name	Concentration	Additional identification	Notes
isobutyl acetate	100%	CAS-No.: 110-19-0	#

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
# This substance has workplace exposure limit(s).

SECTION 4: First aid measures

Description of first aid measures

Inhalation: Move to fresh air. Treat symptomatically. Get medical attention if symptoms persist.

Eye contact:	Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. In case of irritation from airborne exposure, move to fresh air. Get medical attention if symptoms persist.
Skin contact:	Wash with soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.
Ingestion:	Seek medical advice.
Most important symptoms and effects, both acute and delayed:	Narcotic effect.

Indication of any immediate medical attention and special treatment needed

Hazards:	Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea.
Treatment:	Treat symptomatically.

SECTION 5: Firefighting measures

General fire hazards:	Flammable liquid and vapor. USE WATER WITH CAUTION. Material will float and may ignite on surface of water.

Extinguishing media

Suitable extinguishing media:	Water spray. Dry chemical. Carbon Dioxide. Foam.
Unsuitable extinguishing media:	None known.
Special hazards arising from the substance or mixture:	Vapors may cause a flash fire or ignite explosively. Vapors may travel considerable distance to a source of ignition and flash back. Prevent buildup of vapors or gases to explosive concentrations.

Advice for firefighters

Special fire fighting procedures:	Water may be ineffective in fighting the fire. Use water spray to keep fire-exposed containers cool.
Special protective equipment for fire-fighters:	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:	Wear appropriate personal protective equipment.
Environmental precautions:	Avoid release to the environment.

Methods and material for containment and cleaning up: Eliminate sources of ignition. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Large Spillages: Flush spill area with water spray. Prevent runoff from entering drains, sewers, or streams. Dike for later disposal.

Notification Procedures: In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

SECTION 7: Handling and storage:

Precautions for safe handling: Avoid breathing high vapor concentrations. Avoid prolonged or repeated contact with skin. Use only with adequate ventilation. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities: Keep container tightly closed and in a well-ventilated place.

Specific end use(s): Solvent

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational exposure limits

Country specific exposure limits have not been established or are not applicable unless listed below.

Chemical name	Type	Exposure Limit values	Source
isobutyl acetate	TWA	150 ppm	US. ACGIH Threshold Limit Values (01 2010)
	PEL	150 ppm 700 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)

Exposure controls

Appropriate engineering controls: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. Supplementary local exhaust ventilation, closed systems, or respiratory and eye protection may be needed in special circumstances; such as poorly ventilated spaces, heating, evaporation of liquids from large surfaces, spraying of mists, mechanical generation of dusts, drying of solids, etc.

Individual protection measures, such as personal protective equipment

General information: Eye bath. Washing facilities.

Eye/face protection: It is a good industrial hygiene practice to minimize eye contact. Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection: For operations where prolonged or repeated skin contact may occur, chemical-resistant gloves should be worn. Contact health and safety professional or manufacturer for specific information.

Other: No data available.

Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. Respirator type: Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information.

Hygiene measures: Observe good industrial hygiene practices.

Environmental Controls: No data available.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance	
Physical State:	Liquid
Form:	Liquid
Color:	Colorless
Odor:	Fruity
Odor Threshold:	No data available.
pH:	6.7 (20 °C)
Freezing Point:	-90 °C
Boiling Point:	117 °C
Flash Point:	22 °C (Pensky-Martens closed cup)
Evaporation Rate:	No data available.
Flammability (solid, gas):	Not applicable
Flammability Limit - Upper (%)–:	No data available.
Flammability Limit - Lower (%)–:	No data available.
Vapor pressure:	21 hPa (20 °C)
Vapor density (air=1):	4.0
Specific Gravity:	0.871 (20 °C)
Solubility(ies)	
Solubility in Water:	5.6 g/l (20 °C)
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	log Pow: 2.3
Autoignition Temperature:	430 °C
Decomposition Temperature:	No data available.
Dynamic Viscosity:	0.699 mPa.s (20 °C)
Kinematic viscosity:	0.8 mm2/s (20 °C)

Explosive properties:	Not classified
Oxidizing properties:	Not classified

SECTION 10: Stability and reactivity

Reactivity:	None known. Materials containing similar structural groups are normally stable.
Chemical stability:	Not fully evaluated.
Possibility of hazardous reactions:	None known.
Conditions to avoid:	Heat, sparks, flames.
Incompatible materials:	Strong oxidizing agents.
Hazardous decomposition products:	Carbon Dioxide. Carbon Monoxide.

SECTION 11: Toxicological information

Information on likely routes of exposure

Inhalation:	May cause drowsiness or dizziness.
Ingestion:	None known.
Skin contact:	Prolonged or repeated skin contact may cause drying, cracking, or irritation.
Eye contact:	None known.

Information on toxicological effects

Acute Toxicity

Oral

Product:	Oral LD-50: (Rat): 13,413 mg/kg

Dermal

Product:	Dermal LD-50: (Rabbit): > 17,400 mg/kg

Inhalation

Product:	No data available.
Specified substance(s)	
isobutyl acetate	No data available.

Repeated dose toxicity

Product:	NOEL (Rat, Oral Study, 92 d): 316 mg/kg Read-across from a similar material

Skin corrosion/irritation:

Product:	(Rabbit, 24 h): none

Serious eye damage/eye irritation:

Product:	(Rabbit, 24 h): none

Respiratory or skin sensitization:
Product: Skin Sensitization:, (Guinea Pig) - non-sensitizing

Mutagenicity

In vitro
Product: Salmonella typhimurium assay (Ames test), : negative +/- activation

In vivo
Product: Chromosomal aberration, oral: gavage (Mouse): Read-across from a similar material

Carcinogenicity
Product: No data available.

Specified substance(s)
isobutyl acetate No data available.

Reproductive toxicity
Product: No data available.

Specified substance(s)
isobutyl acetate No data available.

Specific target organ toxicity - single exposure
Product: No data available.

Specified substance(s)
isobutyl acetate No data available.

Specific target organ toxicity - repeated exposure
Product: No data available.

Specified substance(s)
isobutyl acetate No data available.

Aspiration hazard
Product: No data available.

Specified substance(s)
isobutyl acetate No data available.

Other adverse effects: No data available.

SECTION 12: Ecological information

Toxicity

Acute toxicity

Fish
Product: LC-50 (Oryzias latipes, 96 h): 17 mg/l

Aquatic invertebrates
Product: EC-50 (daphnid, 48 h): 25 mg/l

Chronic Toxicity

Fish

Product: No data available.

Specified substance(s)

isobutyl acetate — No data available.

Aquatic invertebrates

Product: NOEC: (daphnid, 21 d): 23 mg/l

Toxicity to Aquatic Plants

Product: EC-50 (Alga, 72 h): 370 mg/l
NOEC: (Alga, 72 h): 95 mg/l

Persistence and degradability

Biodegradation

Product: 81 % (20 d, Ready Biodegradability: Closed Bottle Test) Readily biodegradable

Biological Oxygen Demand:

Product BOD-5: 970 mg/g
BOD-20: 1,300 mg/g

Chemical Oxygen Demand:

Product 1,870 mg/g

BOD/COD ratio

Product 0.52 %

Bioaccumulative potential

Product: No data available.

Specified substance(s)

isobutyl acetate — No data available.

Mobility in soil: No data available.

Known or predicted distribution to environmental compartments

isobutyl acetate — 1.193 - 1.844 (QSAR model)

Results of PBT and vPvB assessment: Not fulfilling PBT (persistent/bioaccumulative/toxic) criteria Not fulfilling vPvB (very persistent, very bioaccumulative) criteria.

Other adverse effects: No data available.

SECTION 13: Disposal considerations

Waste treatment methods

General information: No data available.

Disposal methods: Dispose of waste and residues in accordance with local authority requirements. Mix with compatible chemical which is less flammable and incinerate. Since emptied containers retain product residue, follow label warnings even after container is emptied. Residual vapors may explode on ignition; do not cut, drill, grind, or weld on or near this container.

SECTION 14: Transport information

Important Note: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Consult your company's Hazardous Materials/Dangerous Goods expert for information specific to your situation.

DOT

Reportable Quantity: 2,270 kg (butyl acetates)
Possible Shipping Description(s):

UN 1213 Isobutyl acetate 3 II

IMDG - International Maritime Dangerous Goods Code

Possible Shipping Description(s):

UN 1213 ISOBUTYL ACETATE 3 II

IATA

Possible Shipping Description(s):

UN 1213 Isobutyl acetate 3 II

SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture:

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.
WHMIS (Canada) Status: controlled
WHMIS (Canada) Hazard Classification: B/2

SARA 311-312 Hazard Classification(s):
immediate (acute) health hazard
fire hazard

US EPCRA (SARA Title III) Section 313 - Toxic Chemical List

OSHA: hazardous

TSCA (US Toxic Substances Control Act): This product is listed on the TSCA inventory. Any impurities present in this product are exempt from listing.

DSL (Canadian Domestic Substances List) and CEPA (Canadian Environmental Protection Act): This product is listed on the DSL. Any impurities present in this product are exempt from listing.

AICS / NICNAS (Australian Inventory of Chemical Substances and National Industrial Chemicals Notification and Assessment Scheme): This product is listed on AICS or otherwise complies with NICNAS.

MITI (Japanese Handbook of Existing and New Chemical Substances): This product is listed in the Handbook or has been approved in Japan by new substance notification.

ECL (Korean Toxic Substances Control Act): This product is listed on the Korean inventory or otherwise complies with the Korean Toxic Substances Control Act.

Philippines Inventory (PICCS) : This product is listed on the Philippine Inventory or otherwise complies with PICCS.

Inventory of Existing Chemical Substances in China: All components of this product are listed on the Inventory of Existing Chemical Substances in China (IECSC).

SECTION 16: Other information

HMIS® Hazard Ratings: Health - 1, Flammability - 3, Chemical Reactivity - 0

HMIS® rating involves data interpretations that may vary from company to company. They are intended only for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all the information contained in this SDS must be considered.

Revision Information: Not relevant.

Key literature references and sources for data: No data available.

Training information: No data available.

Inventory Status

Korea Existing Chemicals Inventory (KECI):	Yes

DISCLAIMER OF RESPONSIBILITY

The information on this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way connected with handling, storage, use, or disposal of this product. If the product is used as a component in another product, this SDS information may not be applicable.

Revision Date: 07/22/2014 <end of document>