Comet Chemical Company Ltd.
3463 Thomas Street
Innisfill, ON, Canada, L9S 3W4
Telephone: (705) 436 5580

SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label
: **Isobutyl Acetate**

Product Code(s) : None assigned.

Recommended use of the chemical and restrictions on use
: Industrial solvent.
Use pattern: Professional use only
Recommended restrictions: None known.

Chemical family : Pure substance

Name, address, and telephone number of the supplier:
Comet Chemical Company Ltd.
3463 Thomas Street
Innisfill, ON, Canada
L9S 3W4
Supplier's Telephone # : 705-436-5580
24 Hr. Emergency Tel # : TERRRAPURE ENVIRONMENTAL : 800-567-7455

Name, address, and telephone number of the manufacturer:
Refer to supplier

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Clear colourless liquid. Fruity odour.

Most important hazards: This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Hazard classification :

Flammable Liquids - Category 2
Specific Target Organ Toxicity, Single Exposure - Category 3 narcotic effects
Specific target organ toxicity, single exposure - Category 3 respiratory tract irritation

Label elements

Hazard pictogram(s)

Signal Word

DANGER!

Hazard statement(s)

Highly flammable liquid and vapour.
May cause drowsiness or dizziness.
May cause respiratory irritation.
.

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Precautionary statement(s)

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Keep container tightly closed.
Ground/Bond container and receiving equipment.
Use explosion-proof electrical and ventilating equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Avoid breathing mist or vapours.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/eye protection/face protection.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell.
In case of fire: Use water fog, dry chemical, CO2 or 'alcohol' foam to extinguish.

Store locked up.
Store in a well-ventilated place. Keep cool.
Keep container tightly closed.

Dispose of contents/container in accordance with local regulation.

Other hazards

Other hazards which do not result in classification:: Burning produces obnoxious and toxic fumes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause skin and eye irritation. .

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance

Chemical name	Common name and synonyms	CAS #	Concentration (% by weight)
Isobutyl acetate	Acetic acid, isobutyl ester	110-19-0	**100.00**

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

Ingestion : Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if symptoms persist. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration.

Inhalation : If inhaled: Remove person to fresh air and keep comfortable for breathing. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Call a POISON CENTRE or doctor/physician if you feel unwell.

Skin contact : Immediately flush with plenty of water, while removing contaminated clothing.Immediately call a POISON CENTER or doctor/physician. Wash contaminated clothing before reuse.

Eye contact : For eye contact, flush with running water for at least 15 minutes.If eye irritation persists: get medical advice/attention.

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Most important symptoms and effects, both acute and delayed

: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause central nervous system effects. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. May cause respiratory irritation. Symptoms may include sore throat, running nose and shortness of breath. Direct eye contact may cause slight redness. Direct skin contact may cause slight or mild, transient irritation. .

Indication of any immediate medical attention and special treatment needed

: Treat symptomatically. This product is a CNS depressant.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

: Carbon dioxide (CO2); Dry chemical; Alcohol resistant foam; Water fog

Unsuitable extinguishing medi

: Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture / Conditions of flammability

: Highly flammable liquid and vapour.

Vapours may ignite explosively.Vapours are heavier than air and may spread along floors. Static discharge, impact, friction, and heat may ignite exposed chemical material.
Empty containers may contain hazardous residues.

Flammability classification (OSHA 29 CFR 1910.106)

: Flammable Liquids - Category 2

Hazardous combustion products

: Carbon dioxide and carbon monoxide.;Isopropanol and acetic acid.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode.

Special fire-fighting procedures

: Do not breathe fumes or vapours.Move containers from fire area if safe to do so.Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.Dike for water control.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

: All persons dealing with the clean-up should wear the appropriate chemically protective equipment. Keep people away from and upwind of spill/leak. Restrict access to area until completion of clean-up. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Do not allow material to contaminate ground water system. If necessary, dike well ahead of the spill to prevent runoff into drains, sewers, or any natural waterway or drinking supply.

Methods and material for containment and cleaning up

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: Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Use only non-sparking tools and equipment in the clean-up process. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13).Contact the proper local authorities. Refer to Section 13 for disposal of contaminated material.

Special spill response procedures

: In case of transportation accident, contact TERRAPURE ENVIRONMENTAL at 1-800-567-7455.

EPA/CERCLA Reportable quantity (RQ):
Isobutyl acetate (5000 lbs / 2270 kg)

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

: Wear protective gloves and eye/face protection. Use only in well-ventilated areas.Avoid breathing vapour or mist. Avoid contact with skin, eyes and clothing. Keep container tightly closed. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Keep away from flames and hot surfaces. - No smoking. Use only non-sparking tools. Take precautionary measures against static discharges. Ground all equipment during handling. Keep container tightly closed.

Conditions for safe storage : Keep container tightly closed. Store in cool/well-ventilated place. Store locked up. Keep cool. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking. Empty containers may contain hazardous residues. After prolonged storage, may release explosive peroxides in the presence of air. Direct sunlight or heat may accelerate the release of peroxides.

Incompatible materials : Strong oxidizers (e.g. Chlorine, Peroxides, etc.).; Strong acids ;Potassium tert-butoxide
Attacks some elastomers, rubber, plastic and coatings.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

Chemical Name	ACGIH TLV		OSHA PEL	
	TWA	STEL	PEL	STEL
Isobutyl acetate	150 ppm	N/Av	150 ppm ; 700 mg/m³	N/Av

Exposure controls

Ventilation and engineering measures

: Use only in well-ventilated areas. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. Use explosion-proof equipment. In case of insufficient ventilation wear suitable respiratory equipment.

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Respiratory protection	:	If airbourne concentrations are above the permissible exposure limit or are not known, use NIOSH-approved respirators. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02. Advice should be sought from respiratory protection specialists.
Skin protection	:	Wear protective gloves. Advice should be sought from glove suppliers.
Eye / face protection	:	Wear chemical goggles. Wear eye/face protection.
Other protective equipment	:	Ensure that eyewash stations and safety showers are close to the workstation location. Other equipment may be required depending on workplace standards.
General hygiene considerations	:	Do not breathe mist or vapor. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Remove and wash contaminated clothing before re-use. Do not take contaminated clothing home. Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Clear colourless liquid.
Odour	:	Fruity odour.
Odour threshold	:	1.1 ppm
pH	:	Not available.
Melting/Freezing point	:	-99°C
Initial boiling point and boiling range	:	117°C
Flash point	:	17°C
Flashpoint (Method)	:	Cleveland closed cup
Evaporation rate (BuAe = 1)	:	1.5
Flammability (solid, gas)	:	Not available.
Lower flammable limit (% by vol.)	:	1.3%
Upper flammable limit (% by vol.)	:	10.5%
Oxidizing properties	:	None known.
Explosive properties	:	Not explosive
Vapour pressure	:	13 mmHg
Vapour density	:	(Air = 1) 4
Relative density / Specific gravity	:	0.873
Solubility in water	:	Partially soluble. (7 g/L)
Other solubility(ies)	:	Soluble in most organic solvents (e.g. ethanol, acetone, diethyl ether, chloroform).
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution	:	Not available.
Auto-ignition temperature	:	421°C
Decomposition temperature	:	No information available.
Viscosity	:	No data available.
Volatiles (% by weight)	:	Not available.
Volatile organic Compounds (VOC's)	:	Not available.
Absolute pressure of container	:	Not applicable.
Flame projection length	:	Not applicable.

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Other physical/chemical comments
: None known or reported by the manufacturer.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive.
Chemical stability : Stable under normal conditions. Decomposes slowly when exposed to light or on contact with water forming acetic acid and isobutanol.
Possibility of hazardous reactions
: Hazardous polymerization does not occur.
Conditions to avoid : Open flames, sparks, high heat, direct sunlight, and close proximity to incompatible substances. Do not use in areas without adequate ventilation.
Incompatible materials : Incompatible materials (see Section 7).
Hazardous decomposition products
: None known, refer to hazardous combustion products in Section 5.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES
Routes of entry skin & eye : YES
Routes of entry Ingestion : YES
Routes of exposure skin absorption
: NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation
: May cause headache, nausea, drowsiness or other effects on the central nervous system. May cause respiratory irritation. Symptoms may include sore throat, running nose and shortness of breath.

Sign and symptoms ingestion
: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Sign and symptoms skin : Direct skin contact may cause slight or mild, transient irritation.
Sign and symptoms eyes : Direct eye contact may cause slight or mild, transient irritation.

Potential Chronic Health Effects
: Frequent or prolonged contact may dry the skin, leading to discomfort and dermatitis.
Mutagenicity : Not expected to be mutagenic in humans.
Carcinogenicity : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.
Reproductive effects & Teratogenicity
: Not expected to cause reproductive effects.
Sensitization to material : Not expected to be a skin or respiratory sensitizer.

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Specific target organ effects : This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification:
Specific Target Organ Toxicity, Single Exposure - Category 3 narcotic effects
Specific Target Organ Toxicity, Single Exposure -Category 3 (respiratory)

May cause drowsiness or dizziness.
May cause respiratory irritation.

Medical conditions aggravated by overexposure
: Pre-existing skin, eye, respiratory and central nervous system disorders.

Synergistic materials : No information available.

Toxicological data : See below for toxicological data on the substance.

Chemical name	LC_{50}(4hr) inh, rat	LD_{50} (Oral, rat)	LD_{50} (Rabbit, dermal)
Isobutyl acetate	38.01 mg/L	13400 mg/kg	>5000 mg/kg

Other important toxicological hazards
: None reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : Not expected to be harmful to aquatic organisms. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Do not allow material to contaminate ground water system.
See the following tables for the substance's ecotoxicity data.

Ecotoxicity data:

Ingredients	CAS No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Isobutyl acetate	110-19-0	17 mg/L (Oryzias latipes)	N/Av	none

Ingredients	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Isobutyl acetate	110-19-0	25 mg/L (Daphnia magna)	23 mg/L (Daphnia magna)	none

Ingredients	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Isobutyl acetate	110-19-0	370mg/L (Green algae)	95 mg/L (Green algae)	none

Persistence and degradability
: Readily biodegradable

Bioaccumulation potential : No information available.

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Components	Partition coefficient n-octanol/water (log Kow)	Bioconcentration factor (BCF)
Isobutyl acetate (CAS 110-19-0)	2.3	15.3

Mobility in soil : The product itself has not been tested.

Other Adverse Environmental effects
: None known.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal : Handle in accordance with good industrial hygiene and safety practice. Refer to protective measures listed in sections 7 and 8.

Methods of Disposal : Dispose in accordance with all applicable federal, state, provincial and local regulations.

RCRA : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
TDG	UN1213	ISOBUTYL ACETATE	3	II	
TDG Additional information	May be shipped as LIMITED QUANTITY when transported in quantities no larger than 1 Litre, in packages not exceeding 30 kg gross mass.				
49CFR/DOT	UN1213	ISOBUTYL ACETATE	3	II	
49CFR/DOT Additional information	May be shipped as LIMITED QUANTITY when transported in cans no larger than 1 L, in packages not exceeding 30 kg gross mass.				
ICAO/IATA	UN1213	Isobutyl acetate	3	II	
ICAO/IATA Additional information	Refer to ICAO/IATA Packing Instruction				
IMDG	UN1213	ISOBUTYL ACETATE	3	II	
IMDG Additional information	Consult the IMDG regulations for exceptions.				

Special precautions for user : Appropriate advice on safety must accompany the package. Keep away from heat, sparks and open flame. - No smoking.

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Environmental hazards : This product does not meet the criteria for an environmentally hazardous mixture, according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
: This information is not available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

Ingredients	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372. Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Isobutyl acetate	110-19-0	Yes	5000 lb final RQ (listed under Butyl acetate); 2270 kg final RQ (listed under Butyl acetate)	N/Av	No	N/Ap

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Fire Hazard; Immediate (Acute) health hazardUnder SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

Ingredients	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Isobutyl acetate	110-19-0	No	N/Ap	Yes	Yes	Yes	Yes	Yes	Yes

Canadian Information:

CEPA: Canadian Environmental Protection Act :All ingredients are present on the DSL.
WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

Ingredients	CAS #	European EINECs	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
Isobutyl acetate	110-19-0	203-745-1	Present	Present	(2)-735; (2)-731	KE-00055	Present	HSR001092

SECTION 16. OTHER INFORMATION

Legend : ACGIH: American Conference of Governmental Industrial Hygienists
AICS: Australian Inventory of Chemical Substances
ATE: Acute Toxicity Estimate

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CA: California
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
CSA: Canadian Standards Association
DOT: Department of Transportation
ECHA: European Chemicals Agency
ECOTOX: U.S. EPA Ecotoxicology Database
EINECS: European Inventory of Existing Commercial chemical Substances
ENCS: Existing and New Chemical Substances
EPA: Environmental Protection Agency
HSDB: Hazardous Substances Data Bank
IARC: International Agency for Research on Cancer
IBC: Intermediate Bulk Container
IECSC: Inventory of Existing Chemical Substances
IMDG: International Maritime Dangerous Goods
IOC: Inventory of Chemicals
IUCLID: International Uniform Chemical Information Database
KECI: Korean Existing Chemicals Inventory
KECL: Korean Existing Chemicals List
LC: Lethal Concentration
LD: Lethal Dose
MA: Massachusetts
MN: Minnesota
N/Ap: Not Applicable
N/Av: Not Available
NIOSH: National Institute of Occupational Safety and Health
NJ: New Jersey
NOEC: No observable effect concentration
NTP: National Toxicology Program
OECD: Organisation for Economic Co-operation and Development
OSHA: Occupational Safety and Health Administration
PA: Pennsylvania
PEL: Permissible exposure limit
PICCS: Philippine Inventory of Chemicals and Chemical Substances
RCRA: Resource Conservation and Recovery Act
RI: Rhode Island
RTECS: Registry of Toxic Effects of Chemical Substances
SARA: Superfund Amendments and Reauthorization Act
SDS: Safety Data Sheet / Material Safety Data Sheet
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

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References : 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2016
2. International Agency for Research on Cancer Monographs, searched 2016
3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2016(Chempendium, HSDB and RTECs).
4. Material Safety Data Sheets from manufacturer.
5. US EPA Title III List of Lists - 2016 version.
6. California Proposition 65 List - 2016 version.
7. OECD - The Global Portal to Information on Chemical Substances - eChemPortal,2016.

Preparation Date (mm/dd/yyyy) : 11/07/2016

Other special considerations for handling : Provide adequate information, instruction and training for operators.

Prepared for: Comet Chemical Company Ltd. 3463 Thomas Street Innisfill, ON L9S 3W4 Information (M-F 8:00-5:00): 705-436-5580 www.cometchemical.com	COMET COMET CHEMICAL COMPANY LTD.
Prepared by: ICC The Compliance Center Inc. Telephone: (888) 442-9628 (U.S.): (888) 977-4834 (Canada) http://www.thecompliancecenter.com	icc ComplianceCenter

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