COMET CHEMICAL COMPANY LTD.

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

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SECTION 1. IDENTIFICATION

Product identifier used on the label
: **Dibasic Ester**

Other means of identification : None reported.

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

Chemical family : Esters

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

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

24 Hr. Emergency Tel # : GFL Environmental - 1-888-772-2543

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Clear colourless liquid. Musty odour.

Most important hazards: Causes eye irritation. Occupational exposure to the substance or mixture may cause adverse 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).

Hazard classification:
Eye irritation - Category 2B

Label elements

Hazard pictogram(s)

None required under U.S. OSHA Hazcom 2012 and Canadian WHMIS 2015 regulations.

Signal Word

Warning!

Hazard statement(s)

Causes eye irritation.

Precautionary statement(s)

Wash thoroughly after handling.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

Other hazards

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Other hazards which do not result in classification:
Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.May be mildly irritating to skin and respiratory system.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Chemical name	Common name and synonyms	CAS #	Concentration (% by weight)
Pentanedioic acid, dimethyl ester	Glutaric acid dimethyl ester DBE-5 dibasic ester	1119-40-0	**45.0 - 70.0**
Dimethyl succinate	Butanedioic acid, dimethyl ester Dimethyl butanedioate	106-65-0	**10.0 - 30.0**
Dimethyl Adipate	Hexanedioic acid, dimethyl ester Dimethyl hexanedioate	627-93-0	**10.0 - 30.0**

The exact concentrations and/or specific chemical identities of the above listed chemicals are being withheld as a trade secret.

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

Ingestion : Do NOT induce vomiting. Have victim rinse mouth with water, then give one to two glasses of water to drink. Never give anything by mouth to an unconscious person. Call a physician.

Inhalation : If inhaled, move to fresh air. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing has stopped, give artificial respiration. Obtain medical attention if symptoms develop and persist.

Skin contact : Wash off immediately with plenty of water. Remove and wash contaminated clothing before re-use. If irritation or symptoms develop, seek medical attention.

Eye contact : Immediately flush eyes with running water for at least 5 to 10 minutes. If irritation persists, seek prompt medical attention.

Most important symptoms and effects, both acute and delayed

: Causes eye irritation. Symptoms may include tearing, redness and discomfort. Direct skin contact may cause slight or mild, transient irritation. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Indication of any immediate medical attention and special treatment needed

: Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

: Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide and dry chemical.

Unsuitable extinguishing media

: 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

: Burning may produce irritating, toxic and obnoxious fumes.

Flammability classification (OSHA 29 CFR 1910.106)

: Not flammable.

Hazardous combustion products

: Carbon oxides and other irritating fumes and smoke.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

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: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Do not enter without wearing specialized protective equipment suitable for the situation. Firefighter's normal protective clothing (Bunker Gear) will not provide adequate protection. A full-body encapsulating chemical protective suit with positive pressure self-contained breathing apparatus (NIOSH approved or equivalent) may be necessary.

Special fire-fighting procedures

: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

: Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. Wear suitable protective equipment. Refer to protective measures listed in sections 7 and 8. Restrict access to area until completion of clean-up.

Environmental precautions : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces.

Methods and material for containment and cleaning up

: Ventilate area of release. Stop spill or leak at source if safely possible. Dike for water control. 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).

Special spill response procedures

: In Canada:For 24-hour emergency assistance, call: 1-613-996-6666 (CANUTEC).

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

: Use only in well-ventilated areas. Wear suitable protective equipment during handling. Avoid breathing vapours or mists. Avoid contact with eyes, skin and clothing. Keep away from extreme heat and flame. Keep away from incompatibles. Keep containers tightly closed when not in use. Wash thoroughly after handling.

Conditions for safe storage : Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Store away from incompatible materials.No smoking in the area.

Incompatible materials : Strong oxidizers (e.g. Chlorine, Peroxides, etc.).; Strong acids ;Strong alkalis .

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

Chemical Name	ACGIH TLV		OSHA PEL	
	TWA	STEL	PEL	STEL
Pentanedioic acid, dimethyl ester	N/Av	N/Av	N/Av	N/Av
Dimethyl succinate	N/Av	N/Av	N/Av	N/Av
Dimethyl Adipate	N/Av	N/Av	N/Av	N/Av

Exposure controls

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Ventilation and engineering measures : Use in a well-ventilated area. Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

Respiratory protection : If airbourne concentrations are above the permissible exposure limit or are not known, use NIOSH-approved respirators. Advice should be sought from respiratory protection specialists.

Skin protection : Gloves impervious to the material are recommended. Advice should be sought from glove suppliers.

Eye / face protection : Safety glasses with side-shields or chemical splash goggles, depending on workplace standards.

Other protective equipment : Wear sufficient clothing to prevent skin contact. Depending on conditions of use, an impervious apron should be worn. An eyewash station and safety shower should be made available in the immediate working area.

General hygiene considerations : Avoid breathing vapour or mist. Avoid contact with skin, eyes and clothing. Wash contaminated clothing before reuse. Do not eat, drink, smoke or use cosmetics while working with this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse. Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State : Liquid
Colour : Clear, colorless.
Odour : Musty odour.
Odour threshold : N/Av
pH : N/Av
Melting Point/Freezing point : - 20°C (-4°F)
Initial boiling point and boiling range : 196-225°C (384.8-437°F)
Flash point : 100°C (212°F)
Flashpoint (Method) : closed cup
Evaporation rate (BuAe = 1) : Not available.
Flammability : Not applicable.
Lower explosion or flammability limit (% by vol.) : 0.9%
Upper explosion or flammability limit (% by vol.) : 8%
Oxidizing properties : None known.
Explosive properties : Not explosive
Vapour pressure : 0.2 mmHg
Relative vapour density : > 1 (Air = 1)
Relative density / Specific gravity : 1.09(water = 1)
Solubility in water : Partially soluble.
Other solubility(ies) : Not available.
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution : Not available.
Auto-ignition temperature : 370°C (698°F)
Decomposition temperature : Not available.
Viscosity : Not available.
Particle characteristics : N/Ap

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Volatiles (% by weight) : Not available.
Volatile organic Compounds (VOC's)
: N/Av
Absolute pressure of container
: N/Ap
Flame projection length : N/Ap
Other physical/chemical comments
: None known or reported by the manufacturer.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive.
Chemical stability : Material is stable under normal conditions.
Possibility of hazardous reactions
: Hazardous polymerization does not occur.
Conditions to avoid : Avoid excessive heat, sparks and open flame. Avoid contact with incompatible materials.
Incompatible materials : Strong oxidizing agents Strong acids Strong alkalis
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
: If product is heated or mists are formed, inhalation may cause irritation to the nose, throat and respiratory tract.
Sign and symptoms ingestion
: Ingestion may irritate digestive tract and cause nausea, vomiting and diarrhea.
Sign and symptoms skin : Direct skin contact may result in little or no irritation.
Sign and symptoms eyes : Causes eye irritation. Symptoms may include tearing, redness and discomfort.
Potential Chronic Health Effects
: Prolonged or repeated contact may cause drying, cracking and defatting of the skin.
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.
Specific target organ effects : This material is not classified as hazardous under U.S. OSHA regulations (29 CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

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Medical conditions aggravated by overexposure
: None known.

Synergistic materials : Not available.

Toxicological data : See below for individual ingredient acute toxicity data.

Chemical name	LC_{50}(4hr) inh, rat	LD_{50} (Oral, rat)	LD_{50} (Rabbit, dermal)
Pentanedioic acid, dimethyl ester	> 11 mg/L (aerosol) (No mortality) (Read-across)	> 5000 mg/kg	> 2000 mg/kg (No mortality)
Dimethyl succinate	> 5.9 mg/L (aerosol) (No mortality) (Read-across)	> 5000 mg/kg	> 2000 mg/kg (No mortality)
Dimethyl Adipate	> 11 mg/L (aerosol) (No mortality) (Read-across)	> 5000 mg/kg	> 5000 mg/kg

Other important toxicological hazards
: None known.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : Not expected to be harmful to aquatic organisms. Do not allow material to contaminate ground water system. See the following tables for individual ingredient ecotoxicity data.

Ecotoxicity data:

Ingredients	CAS #	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Pentanedioic acid, dimethyl ester	1119-40-0	30.9 mg/L (Bluegill sunfish)	N/Av	None.
Dimethyl succinate	106-65-0	50 - 100 mg/L (Zebra fish)	19.7 mg/L/32-day (QSAR)	None.
Dimethyl Adipate	627-93-0	18 - 24 mg/L (Fathead minnow) (Read-across)	N/Av	None.

Ingredients	CAS #	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Pentanedioic acid, dimethyl ester	1119-40-0	1275 mg/L (Daphnia magna) (calculated)	N/Av	None.
Dimethyl succinate	106-65-0	> 100 mg/L (Daphnia magna)	507.1 mg/L (QSAR)	None.
Dimethyl Adipate	627-93-0	72 mg/L (Daphnia magna)	N/Av	None.

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Ingredients	CAS #	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Pentanedioic acid, dimethyl ester	1119-40-0	N/Av	36 mg/L/72hr (Green algae)	None.
Dimethyl succinate	106-65-0	> 100 mg/L/72hr (Green algae)	100 mg/L/72hr	None.
Dimethyl Adipate	627-93-0	> 100 mg/L/72hr (Green algae)	12.5 mg/L/72hr	None.

Persistence and degradability : Readily biodegradable

Bioaccumulation potential : Not expected to bioaccumulate.

Components	Partition coefficient n-octanol/water (log Kow)	Bioconcentration factor (BCF)
Pentanedioic acid, dimethyl ester (CAS 1119-40-0)	0.62 (calculated)	3.162 (estimated)
Dimethyl succinate (CAS 106-65-0)	0.33	3.16 (QSAR)
Dimethyl Adipate (CAS 627-93-0)	1.4	1.2

Mobility in soil : High water solubility indicates a high mobility in soil.

Other Adverse Environmental effects : No information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal : Handle waste according to recommendations in Section 7.

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

RCRA : Under the RCRA, 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, provincial and federal environmental agencies.

SECTION 14. TRANSPORT INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	None.	Not regulated.	not regulated	none	
49CFR/DOT Additional information	None.				
TDG	None.	Not regulated.	Not regulated	none	
TDG Additional information	None.				

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Special precautions for user : None known or reported by the manufacturer.
Environmental hazards : This substance does not meet the criteria for an environmentally hazardous substance according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

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 Minimis Concentration
Pentanedioic acid, dimethyl ester	1119-40-0	Yes	None.	None.	No	N/Ap
Dimethyl succinate	106-65-0	Yes	None.	None.	No	N/Ap
Dimethyl Adipate	627-93-0	Yes	None.	None.	No	N/Ap

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Eye irritation

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
Pentanedioic acid, dimethyl ester	1119-40-0	No	N/Ap	No	No	No	No	No	No
Dimethyl succinate	106-65-0	No	N/Ap	No	No	No	No	No	No
Dimethyl Adipate	627-93-0	No	N/Ap	No	No	No	No	No	No

Canadian Information:

All ingredients are present on the DSL.

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
Pentanedioic acid, dimethyl ester	1119-40-0	214-277-2	Present	Present	(2)-925; (2)-857	KE-27978	Present	HSR003381
Dimethyl succinate	106-65-0	203-419-9	Present	Present	(2)-848	KE-03764	Present	HSR003468
Dimethyl Adipate	627-93-0	211-020-6	Present	Present	(2)-879; (2)-861	KE-18697	Present	HSR003467

SECTION 16. OTHER INFORMATION

Legend : ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstract Services

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CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CNS: Central Nervous System
COC: Cleveland Open Cup
CSA: Canadian Standards Association
DOT: Department of Transportation
EPA: Environmental Protection Agency
IARC: International Agency for Research on Cancer
LC: Lethal Concentration
LD: Lethal Dose
N/Ap: Not Applicable
N/Av: Not Available
NIOSH: National Institute of Occupational Safety and Health
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: Permissible exposure limit
SARA: Superfund Amendments and Reauthorization Act
STEL: Short Term Exposure Limit
TLV: Threshold Limit Values
TWA: Time Weighted Average

References : 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices
2. ECHA - European Chemical Agency
3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases
4. Safety Data Sheets from manufacturer.
5. US EPA Title III List of Lists
6. California Proposition 65 List
7. OECD - The Global Portal to Information on Chemical Substances - eChemPortal

Preparation Date (mm/dd/yyyy) : 08/30/2016

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Revision No. : 2

Revision Information : Updated SDS to the comply with new 2023 WHMIS format

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

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