SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name	OPTOLINQ™ LE-8011U Part B
Applications:	Optically clear epoxy encapsulating adhesive hardener
Advised Against	No further relevant information is available
Supplier Name	Caplinq Europe BV

CAPLINQ Europe BV
Industrieweg 15E
1566 JN Assendelft
The Netherlands
+31 20 893 2224

CAPLINQ Corporation
80 Sirocco Crescent
Ottawa, ON K2S 2C9
Canada
+1 (613) 416 8426

CAPLINQ Americas
36927 Schoolcraft Rd
Livonia, MI 48150
United States of America
+1 (618) 416 9739

CAPLINQ Malaysia
S-08-07 Setia Triangle
Penang, BL 11900
Malaysia
+60 (15) 460 00453

SECTION 2. HAZARDS IDENTIFICATION

CLASSIFICATION OF THE SUBSTANCE/MIXTURE
Classification according to Regulation (EC) No 1272/2008

Hazard Class	**Hazard Category**
Eye Damage	Category 1
Respiratory Sensitisation	Category 1
Skin Sensitisation	Category 1

LABEL ELEMENTS
Labeling according to Regulation (EC) No 1272/2008
The product is classified and labelled according to the CLP regulation.

Hazard Pictogram

Signal Word Danger

Hazard Statements

H317	May cause an allergic skin reaction
H318	Causes serious eye damage.
H334	May cause an allergic skin reaction.

Prevention Precautionary Statements

P261	Obtain, read, and follow all safety instructions before use.
P272	Contaminated work clothing should not be allowed out of the workplace
P280	Wear protective gloves/eye protection
P284	In case of inadequate ventilation, wear respiratory protection.

Response Precautionary Statements

P310	Immediately call a POISON CENTER/doctor.
P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P362+P364	Take off contaminated clothing and wash it before reuse.

Disposal Precautionary Statements

P501	Dispose of contents or container to an approved waste disposal.

OTHER HAZARDS	No available data
Ecological information:	No available data
Toxicological information:	No available data

SECTION 3. INGREDIENT COMPOSITION

No.	Components	CAS No.	Proportion (%)
1	Methylhexahydrophthalic anhydride	25550-51-0	20-<98%

***SVHC** · CAS: 19438-60-9 hexahydro-4-methylphthalic anhydride*

SECTION 4. FIRST AID MEASURES

DESCRIPTION OF FIRST-AID MEASURES

General advice	First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.
If inhaled	After inhalation, move the patient to fresh air. Immediately call a physician if breathing stops or if the patient is experiencing any discomfort
In case of skin contact	In case of skin contact, take off immediately all contaminated clothing. Wash with plenty of soap and water. Consult a physician.
In case of eye contact	After eye contact, rinse cautiously with water for several minutes (≥15 min). Remove contact lenses if present and easy to do; continue rinsing. Immediately call in an ophthalmologist..
If swallowed	If swallowed, Seek medical advice immediately. Rinse mouth. Do NOT induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person. Consult a doctor as quickly as possible.

MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.

Eye irritation	Severe pain, marked irritation/redness, tearing, blurred vision; risk of corneal injury without prompt irrigation
Skin sensitisation	Redness, dryness, may cause allergic skin reaction after repeated contact.
Inhalation	Respiratory sensitisation possible: coughing, wheezing, chest tightness; symptoms may be delayed

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

Treat symptomatically. For eye exposure, consider ophthalmologic evaluation if symptoms persist. For skin allergy/dermatitis, manage with standard care. Monitor upper respiratory tract if significant inhalation occurred. No specific antidote. Supportive care only.

SECTION 5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Suitable	Water spray, Carbon dioxide foam, dry chemical powder, fire fighting sand.
Unsuitable	High-pressure water jet (may spread the material)

SPECIAL HAZARDS ARISING FROM SUBSTANCE OR MIXTURE

Fire hazard	Not classified as flammable, but combustible when heated. Exothermic polymerisation can occur on contact with amine curing agents, increasing temperature and fire intensity.
Hazardous decomposition	Carbon monoxide, carbon dioxide, nitrogen oxides; irritating fumes.

ADVICE FOR FIREFIGHTERS

Precautions during firefighting	Evacuate personnel and isolate the fire area. Keep unauthorized individuals away from the fire area. Move the product to a safe location if possible and ensure the safety of personnel. When extinguishing the fire, maintain a safe position or distance. Water spray may not be effective in putting out the fire. After the fire is fully extinguished and there is no risk of re-ignition, use water spray to cool the fire area and the container holding the product.
Protection during firefighting	Firefighting and rescue teams must wear appropriate protective equipment including gloves, glasses, and shoes. Stay in the danger area only with self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Do not attempt to take any action without wearing the proper protective clothing and equipment. Follow emergency procedures and consult an expert. Only trained personnel should handle the cleanup of the spillage. For personal protection information, refer to Section 8.

ENVIRONMENTAL PRECAUTIONS

Do not let products enter drains, drinking water sources, surface water, and soil.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

Small spill:	Absorb with inert material (e.g., sand/vermiculite, paper towels for thin films), place in labelled, closed container.
Large spill:	Stop leak if safe; dike with sand/earth, pump into salvage containers. Clean with detergent/water; ventilate. Avoid uncontrolled contact with amine hardeners (exotherm). Dispose via licensed waste contractor (Section 13).

REFERENCE TO OTHER SECTIONS

For exposure controls/personal protection, see Section 8. For disposal considerations, see Section 13.

SECTION 7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING

Advice on safe handling	Avoid contact with skin and eyes; do not breathe vapours/mist. Ensure good general ventilation; use local exhaust where vapour/mist could form. Keep away from ignition sources; no smoking. Mixing with curing agents is exothermic. Control batch size and temperature; add slowly with agitation. Do not preheat unless used immediately. Prevent leakage/spills; keep containers closed when not in use.
Hygiene measures	Wash hands after handling. Remove contaminated clothing and wash before reuse. For precautions, see Section 2.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Storage conditions	Store tightly closed in a cool (10 – 30 °C), dry, well-ventilated place (RH < 70 %), protected from direct sunlight, rain, and rapid temperature changes. Keep away from ignition sources and segregated from amines, strong alkalis/acids, and oxidising agents. Keep in the original container. If alternative packaging is considered, confirm material compatibility before use.. Shelf-life under

recommended conditions is 183 days. Refer to the Technical Data Sheet (TDS) for any product-specific storage temperature and shelf-life guidance.

Storage class	Non-combustible liquid

SPECIFIC END USE(S)

Industrial/professional use only as an optically clear epoxy encapsulating adhesive hardener. Follow process instructions to minimise aerosol/mist generation and manage heat during curing.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

CONTROL PARAMETERS

Occupational exposure limits	None established for the mixture. Check national/enterprise OELs if applicable.

EXPOSURE CONTROLS

Engineering controls	
Ventilation	Use local exhaust ventilation where vapour/mist could form; maintain effective general room ventilation.
Emergency fixtures	Provide eyewash and safety shower near use areas.
Thermal caution	Mixing with curing agents can be exothermic; therefore, control the batch size/temperature (see Section 10).
Individual protection	
Eye and face protection	Chemical-splash goggles. Add a face shield for bulk transfer/splash risk.
Hand protection	Chemical-resistant gloves. Replace at the first sign of wear or contamination.
Body protection	Long-sleeved protective clothing; add an impervious apron for bulk handling. Remove/clean contaminated clothing..
Respiratory protection	Not required with adequate ventilation. If ventilation is insufficient or aerosols may form, use a half-mask respirator with A-P2/A-P3 filter .
Hygiene measures	Avoid skin/eye contact. Wash hands after handling and before breaks. No eating, drinking, or smoking in work areas.
Environmental exposure controls	Prevent release to drains/surface water. Contain spills and dispose per Section 13.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear to light yellow transparent liquid
Odor	Acid smell
pH	Not determined
Melting point	Not determined
Boiling point	>200°C
Flash point	Not determined
Flammability	Not determined
Vapor pressure	Not determined
Explosive limit	Not determined
Auto-ignition temperature	Not determined
Decomposition temperature	>200°C
Solubility	Not soluble in water
Viscosity	<100 cP at 25°C

Density at 20°C	1.16-1.18 g/cm^3
Partition coefficient (n-octanol/water)	Not determined

OTHER INFORMATION

Information with regard to physical hazard classes	No additional information available
Other safety characteristics	No additional information available

SECTION 10. STABILITY & REACTIVITY

Reactivity	Not self-reactive at ambient conditions. Epoxy groups can undergo exothermic polymerisation with nucleophiles (amines, acids/anhydrides). Avoid uncontrolled mixing/contamination.
Chemical Stability	Stable under recommended storage (10 – 30 °C, dry, sealed). Avoid moisture ingress and sunlight.
Possibility of hazardous reactions	Uncontrolled polymerisation are not expected under normal processing conditions
Conditions to avoid	Do not preheat the material unless will be used immediately. Failure to observe precautions may result in excessive heat building causing an exotherm.
Incompatible materials	Strong oxidising agents, strong lewis or mineral acids.
Hazardous decomposition products	On thermal decomposition or fire this product emits carbon monoxide, carbon dioxide, and/or low molecular wight hydrocarbons. And oxides of nitrogen..

SECTION 11. TOXICOLOGICAL INFORMATION

INFORMATION ON HAZARD CLASSES AS DEFINED (EC) No 1272/2008

Acute Toxicity (Oral)	Not classified, based on available data
Acute Toxicity (Dermal)	Not classified, based on available data
Acute Toxicity (Inhalation)	Not classified, based on available data
Skin corrosion/irritation	Short-term exposure will not have a significant skin irritation Long-term repeated exposure may cause chemical dermatitis.
Serious eye damage/irritation	Classified: Eye Dam. 1 (H318) – Causes serious eye damage.
Respiratory or skin sensitisation	Classified: Skin Sens. 1 (H317) – May cause an allergic skin reaction. Classified: Resp. Sens. 1 (H334) – May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Germ cell mutagenicity	Not classified, based on available data
Carcinogenicity	Not classified, based on available data
Reproductive Toxicity	Not classified, based on available data
Specific Target Organ Toxicity (Single and Repeated Exposure)	Not classified, based on available data
Aspiration hazard	Low volatility at ambient conditions; inhalation exposure is typically minimal.

INFORMATION ON OTHER HAZARDS

Endocrine-disrupting properties	None of the components are listed as endocrine-disrupting under current EU criteria.
Adverse health effects caused by endocrine disrupting properties	No data available. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Potential adverse human health effects and symptoms

Likely routes of exposure	Skin and eye contact; inhalation where aerosols/vapours are generated during heating, mixing, or spraying; ingestion is incidental only
Skin contact	May result in redness, dryness, or eczema upon repeated exposure; may cause an allergic skin reaction.
Eye contact	Severe pain, redness, tearing, blurred vision. Risk of corneal damage without immediate rinsing.
Inhalation	May cause allergy or asthma symptoms or breathing difficulties if inhaled; symptoms include coughing, wheezing, chest tightness..
Ingestion	May cause local irritation of mucous membranes; systemic toxicity is unlikely.
Immediate vs delayed effects	Eye damage may be immediate; skin or respiratory sensitisation can develop after repeated exposure and reappear on subsequent exposures, even at very low levels.

SECTION 12. ECOLOGICAL INFORMATION

Ecological Toxicity	The mixture is not classified as hazardous to the aquatic environment under CLP. Nevertheless, avoid release to drains, surface water or soil.
Persistence and biodegradability	Epoxy hardeners are not readily biodegradable but can degrade slowly under environmental conditions; persistence is unlikely.
Bioaccumulation potential	No significant bioaccumulation potential expected
Mobility in soil	No available data
PBT and vPvB assessment	This substance/mixture contains no components considered to be either persistent bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
Endocrine-disrupting properties	No components are listed as endocrine disruptors in current EU databases.
Other adverse effects	Uncured hardener can harm aquatic organisms; allow disposal only after polymerisation and hardening.

SECTION 13. DISPOSAL CONSIDERATIONS

WASTE NATURE

Waste classification is process dependent. Unreacted epoxy resin and hardener are classified as hazardous, while cured epoxy solid is non-hazardous waste.

WASTE TREATMENT METHODS

Uncured resin	Send to a licensed hazardous-waste incinerator (high-temperature, energy-recovery preferred). Fully cured/hardened material may be disposed of as non-hazardous industrial waste if allowed by local regulations. Do not discharge to sewers or surface water.
Contaminated absorbents, wipes and PPE	Treat as hazardous solid waste, incinerate with the product.
Empty steel/HDPE drums	Drain, allow residue to cure, then send for reconditioning or metal recycling; if not cleanable, dispose as above.
Cured/hardened material	When fully crosslinked and free of hazardous residues, it is disposed of as non-hazardous industrial waste. Confirm with local regulations and receiving facilities.

WASTE TREATMENT PRECAUTIONS

Warning: Generated waste may be hazardous. Wear appropriate PPE. Avoid random disposal; comply with city, state, or national regulations.

SECTION 14. TRANSPORT INFORMATION

Following guidelines from the United Nations Model Recommendations on the Transport of Dangerous Goods (TDG) and the International Maritime Dangerous Goods Code, this product is not classified as dangerous goods.

UN NUMBER OR ID NUMBER	
ADR/RID/ADN, IMDG, IATA	Not applicable – not regulated as dangerous goods
PROPER SHIPPING NAME	Not applicable
ADR/RID/ADN	Not applicable
IMDG	Not applicable
IATA	Not applicable
TRANSPORT HAZARD CLASS	
Hazard Class	Not applicable
Label	Not applicable
PACKING GROUP	
ADR/RID/ADN, IMDG, IATA	Not applicable
ENVIRONMENTAL HAZARDS	Not classified as environmentally hazardous for any mode of transport
Marine pollutant	Not applicable
Special marking (ADR/RID/ADN)	Not applicable
Special marking (IATA)	Not applicable
SPECIAL PRECAUTIONS FOR USER	
Hazard identification number (Kemler code)	Not applicable
EMS Number	Not applicable
Stowage Category	Not applicable

- Ensure the container is leak-proof.
- During transport, prevent falling, tipping, collisions, and exposure to direct sunlight.
- Pack and transport in a sealed container.
- Transportation must adhere to applicable national and international regulations.

MARITIME TRANSPORT IN BULK ACCORDING TO IMO INSTRUMENTS	Not transported in bulk.

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized safety officer. It is the responsibility of the transporting organization to follow all applicable laws, regulations, and rules relating to the transportation of the material.

SECTION 15. REGULATORY INFORMATION

SAFETY, HEALTH, AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE

Regulation (EC) No. 1907/2006 (REACH) – Annex XVII (Restriction):
This substance/mixture does not contain any substances subject to restrictions under Annex XVII.
Regulation (EC) 1907/2006 (REACH) – Annex XIV (Authorisation):
This substance/mixture does not contain any substances subject to authorization under Annex XIV.
Regulation (EC) No. 1907/2006 (REACH) – Candidate List of Substances of Very High Concern (SVHC):
None of the ingredients is listed as SVHCs established under REACH Article 59.
Regulation (EC) No. 1272/2008 (CLP):
Classification, labeling, and packaging of substances and mixtures comply with CLP requirements.

Directive 2012/18/EU (Seveso III Directive) – Annex I:
This substance/mixture is not classified as a named dangerous substance under the Seveso III Directive.
Directive 2011/65/EU (RoHS Directive) – Annex II:
The substance is not listed as a restricted material under the RoHS Directive.
National Regulations:
Observe national and local worker-protection and environmental release rules

CHEMICAL SAFETY ASSESSMENT
No chemical-safety assessment has been carried out for this mixture.

SECTION 16. OTHER INFORMATION

The information in this safety data sheet was obtained from reputable sources and, to the best of our knowledge, is accurate and current at the mentioned date. Neither CAPLINQ Corporation nor CAPLINQ Europe BV accepts any liability arising out of the use of the information provided here or the use, application, or processing of the product described herein.

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgments of the suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.