

Safety Data Sheet

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name	OPTOLINQ™ LE-2161HT PART B		
Applications	Clear liquid encapsulant		
Advised Against	No further relevant information is available		
Supplier Name	Krayden Europe BV		
	Krayden Europe B.V. Industrieweg 15E 1566JN Assendelft, The Netherlands +31 20 893 2224	Krayden Inc 1491 West 124th Ave, Denver, Colorado United States of America +1 (800) 448 0406	Krayden (M) Sdn. Bhd. Valdor Industrial Area, 14200, Sungai Jawi, Penang, 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
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Skin corrosion/irritation	Category 1C
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Serious eye damage/eye irritation	Category 1
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Hazardous to the aquatic environment, long-term hazard	Category 3
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LABEL ELEMENTS

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP Regulation.



Signal Word	Danger
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Hazard Statements

H314	Causes severe skin burns and eye damage
H412	Harmful to aquatic life with long lasting effects

Prevention Precautionary Statements

P260	Do not breathe mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response Precautionary Statements

P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P363	Wash contaminated clothing before reuse.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P310
P305+P351+P338

Immediately call a POISON CENTER/doctor.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage and Disposal

P405
P501

Store locked up.
Dispose of contents/container in accordance with applicable regulations.

Other Hazards

The mixture contains no components considered to be PBT or vPvB at levels of 0.1% or higher.
The mixture contains no components identified as having endocrine-disrupting properties at levels of 0.1% or higher based on the available information.

SECTION 3. INGREDIENT COMPOSITION

SUBSTANCES Not applicable. This product is a mixture.

MIXTURES

Product Description Clear liquid encapsulant component (Part B)

Chemical Nature Mixture of polyetheramine hardener and amine accelerator.

COMPONENTS AND CONCENTRATION RANGES

No.	Components	CAS No.	Proportion (%) ¹
1	Poly(propylene glycol) bis(2-aminopropyl ether) <i>Skin Corr. 1C, H314; Eye Dam. 1, H318; Aquatic Chronic 3, H412</i>	9046-10-0	90~99
2	2,4,6-tris(dimethylaminomethyl)phenol <i>Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319</i>	90-72-2	0.1~10

¹ Specific chemical identity and/or exact concentration of certain components are withheld as confidential business information, where permitted. The disclosed concentration ranges are complementary and the finished formulation totals 100%. Hazard classifications, concentration ranges, and other information necessary for safe handling and emergency response are provided

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 until discomfort disappears, if breathing is difficult, provide oxygen; if breathing stops, perform artificial respiration and seek medical attention immediately.

In case of skin contact

In case of skin contact, rinse the affected skin with water and soap until the contaminant is removed. Seek medical attention immediately.

In case of eye contact	After eye contact, hold the eyelid open and rinse with plenty of water until the contaminant is removed. Seek medical attention immediately.
If swallowed	If swallowed, seek medical advice immediately. Never give anything by mouth to an unconscious person and 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.

Skin Sensitization	Severe skin burns and serious eye damage.
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INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

No data available.

SECTION 5. FIREFIGHTING MEASURES**EXTINGUISHING MEDIA**

Suitable	Carbon dioxide, foam, dry chemical powder or firefighting sand. Water spray may be used to cool containers.
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Chemical Nature	No information available
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SPECIAL HAZARDS ARISING FROM SUBSTANCE OR MIXTURE

Fire Hazard	The product may react exothermically with reactive resin components under uncontrolled mixing conditions, causing a significant temperature rise.
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Hazardous decomposition	Carbon monoxide, carbon dioxide and other toxic gases.
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ADVICE FOR FIREFIGHTERS

Precautions during firefighting	Evacuate personnel and isolate the fire area. Keep unauthorized individuals away. Move the product to a safe location if possible without risk. Maintain a safe position or distance. After the fire is fully extinguished and there is no risk of re-ignition, use water spray to cool the fire area and containers.
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Protections 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.
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SECTION 6. ACCIDENTAL RELEASE MEASURES**PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES**

Do not attempt to take any action without wearing proper protective clothing and equipment. Follow emergency procedures and consult an expert. Only trained personnel should handle cleanup. 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

Contain and absorb with inert absorbent material such as sand, silica gel or universal binder. Collect the absorbed material in a labelled container. Do not attempt chemical neutralisation unless performed under an approved procedure.

Large Spill

Contain the spill. Use inert absorbent material and collect the absorbed material in a labelled container. Keep unprotected personnel away and prevent entry into drains or waterways.

Handle the spill with care and dispose of collected material in accordance with 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

Ensure sufficient ventilation at the workstation. Avoid contact with skin and eyes. Avoid material leakage.

Hygiene Measures

Contaminated work clothing should not be worn outside workplace premises. Work clothing should be washed before reuse. Wash hands and face after handling the product. For precautions, see Section 2.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Storage Conditions

Store tightly closed in a cool (25 °C), dry, well-ventilated area. Keep away from direct sunlight and heat sources. Store locked up or in a secured location accessible only to qualified or authorized personnel. Shelf-life under recommended conditions is 183 days.

Storage Class

Storage class: LGK 8A, combustible corrosive mixture, according to TRGS 510.

SPECIFIC END USE(S)

Semiconductor liquid encapsulation used by manual or automatic dispensing equipment. Substrates must be clean, dry, and grease-free. Not for consumer use.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

CONTROL PARAMETERS

Exposure Limits

No.	Components	Standards	Reference
1	Poly(propylene glycol) bis(2-aminopropyl ether)	Not Established	OSHA / ACGIH
2	2,4,6-tris(dimethylaminomethyl)phenol	Not Established	OSHA / ACGIH

¹Occupational Safety and Health Administration (OSHA) 8-hour total weight average (TWA) permissible exposure limit (PEL)

²American Conference of Governmental Industrial Hygienists (ACGIH) 8-hour total weight average (TWA) threshold limit value (TLV)

EXPOSURE CONTROLS

Engineering Controls	Use general exhaust ventilation to meet exposure limit requirements.
Individual Protection	The selection of protective equipment should at least comply with the local/applicable guidelines of selecting personal protective equipment.
Eye and Face Protection	Use appropriate goggles and face protection.
Hand Protection	Wear suitable protective gloves
Body Protection	Wear appropriate clothing to minimize exposure. Remove/clean contaminated clothing.
Respiratory Protection	In case of insufficient ventilation, wear suitable respiratory equipment.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Colorless transparent liquid
Odor	None
pH	Not determined
Boiling Point	232 °C
Flash Point	128 °C (closed cup)
Flammability	No data available
Vapor Pressure	0.675 mmHg at 20 °C
Explosive Limit	Not applicable
Auto-Ignition Temperature	Not applicable
Decomposition Temperature	No data available
Solubility	Not soluble in water.
Viscosity	<50 cP at 25 °C
Specific Gravity	0.9476 at 20 °C

OTHER INFORMATION

Information about physical hazard classes	No additional information available
Other safety characteristics	No additional information available

SECTION 10. STABILITY & REACTIVITY

Reactivity	May react exothermically with reactive resin components.
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Chemical Stability	Stable under recommended storage (25 °C, dry, sealed). Avoid moisture ingress and sunlight.
Possibility of Hazardous Reactions	Controlled reaction with the corresponding resin component is exothermic. Uncontrolled mixing may cause a significant temperature rise
Conditions To Avoid	Avoid prolonged heat exposure. See Section 7 for recommended storage and handling conditions.
Incompatible Materials	Acids and reactive resin components outside controlled processing conditions
Hazardous Decomposition Products	Carbon monoxide, carbon dioxide and other toxic gases may be generated during combustion or thermal decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

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

No complete-mixture toxicological test data are available. Available component information is provided below.

CAS No.	Value Type	Value	Route of Exposure
9046-10-0	LD50	>3,070 mg/kg	Oral

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	Skin Corr. 1C. Causes severe skin burns.
Serious Eye Damage/Irritation	Causes serious eye damage.
Respiratory or Skin Sensitisation	Not classified, based on available data
Germ Cell Mutagenicity	Not classified, based on available data
Carcinogenicity	Not classified, based on available data
Reproductive Toxicity	Not classified, based on available data
STOT (Single And Repeated Exposure)	Not classified, based on available data
Aspiration Hazard	Not classified, based on available data

INFORMATION ON OTHER HAZARDS

Endocrine-disrupting properties	The mixture does not contain components identified as having endocrine-disrupting properties at concentrations of 0.1% or higher based on the available information.
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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 No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecological Toxicity Prevent the product from spreading or entering drains, surface water, groundwater or rivers. Harmful to aquatic life with long lasting effects.

Hazardous to the aquatic environment, short term (acute) No available data

Hazardous to the aquatic environment, long-term (chronic) Category 3. Harmful to aquatic life with long lasting effects.

Bioaccumulation potential No available data

Mobility in soil No available data

PBT and vPvB assessment The mixture contains no components considered to be PBT or vPvB at levels of 0.1% or higher.

Endocrine-disrupting properties The mixture contains no components identified as endocrine disruptors at levels of 0.1% or higher based on the available information.

Other adverse effects Epoxy-hardener component is not readily biodegradable but may degrade over time under appropriate environmental conditions.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal of waste needs to be carried out at the city, state, or federally permitted disposal facility. Handle in accordance with applicable regulations and/or local authorities.

WASTE NATURE

Hazardous waste

WASTE TREATMENT METHODS

Uncured and cured compound Do not discharge to sewers or surface water. Dispose of product waste as hazardous waste through an approved waste-disposal facility.

Contaminated absorbents, wipes and PPE Treat as non-hazardous industrial solid waste, incinerate with the product..

Empty packaging Containers containing product residues must be treated as hazardous waste.

WASTE TREATMENT PRECAUTIONS

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

SECTION 14. TRANSPORT INFORMATION

UN Number or ID Number

ADR/RID/ADN, IMDG, IATA UN 2735

Proper Shipping Name

ADR/RID/ADN	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (poly(propylene glycol) bis(2-aminopropyl ether))
IMDG	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (poly(propylene glycol) bis(2-aminopropyl ether))
IATA	Polyamines, liquid, corrosive, n.o.s. (poly(propylene glycol) bis(2-aminopropyl ether))

Transport Hazard Class

ADR/RID/ADN, IMDG, IATA



Hazard Class	8 - Corrosive substances
Subsidiary risk	None
Label	8

Packing Group

ADR/RID/AND, IMDG, IATA III

Environmental Hazards

Hazard	Not environmentally hazardous for transport.
Marine pollutant	Not a marine pollutant
Special marking (ADR/RID/ADN)	Not applicable
Special marking (IATA)	Not applicable
Special precautions for user	Warning: Corrosive liquid. Keep the container tightly closed, upright and secured against movement. Protect the container from damage, tipping, impact, heat and direct sunlight. Prevent leakage and release to drains, surface water, groundwater or soil. See Sections 6, 7 and 8 for spill-response, handling and personal-protection information.

TRANSPORTATION PRECAUTIONS

- The product is classified as dangerous goods for transport under UN 2735, Class 8, Packing Group III.

- Under ADR/RID/ADN and the IMDG Code, the limited-quantity allowance for the UN 2735 Packing Group III entry is 5 L per inner packaging, subject to compliance with all applicable limited-quantity packaging, marking and transport requirements.
- The applicable excepted-quantity code is E1, subject to compliance with all applicable excepted-quantity conditions.
- For ADR/RID/ADN, the applicable transport category is 3 and the tunnel restriction code is (E).
- Use of a limited-quantity or excepted-quantity provision does not change the product's underlying classification as dangerous goods. It only provides conditional relief from specified transport requirements.
- For air transport, determine the applicable packing instruction, package configuration and maximum permitted quantity from the current edition of the IATA Dangerous Goods Regulations and ICAO Technical Instructions. Air-transport quantity limits must not be taken from the ADR/RID/ADN or IMDG limited-quantity value.
- Ensure the container is tightly closed and leak-proof.
- During transport, secure packages against falling, tipping and collision, and protect them from direct sunlight and excessive heat.
- Pack and transport the product in a sealed container suitable for Class 8 corrosive liquids.
- Transportation must comply with the current national and international regulations applicable to the transport mode, packaging configuration, package quantity and route.

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 mixture does not contain any substances subject to restrictions under Annex XVII.

Regulation (EC) 1907/2006 (REACH) – Annex XIV (Authorization):

This 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 are 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:

Based on the classification stated in Section 2, this mixture does not fall within the hazard categories listed in Annex I, Part 1.

No disclosed component was identified as a named dangerous substance listed in Annex I, Part 2.

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 Krayden Inc. nor Krayden Europe BV accept any liability arising out of the use of the information provided here or the use, application or processing of the product described herein.

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