SAFETY DATA SHEET

HiPure™ ECN

High Purity Ethylene Cyanohydrin

Version: 3.0 | Revised: 07/09/2026 | Supersedes: 02/06/2024 (V2.0)

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Product Name:	HiPure™ ECN
Trade Name:	HiPure™ is a trademark of CrossChem Limited
Synonyms:	β-Cyanoethanol; 3-Hydroxypropionitrile
Product Code:	1100
Chemical Family:	Aliphatic nitrile (cyanohydrin)

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Identified Uses: Chemical intermediate.

Uses Advised Against: Not for food, pharmaceutical, cosmetic, or animal-feed use.

1.3 Details of the Supplier of the Safety Data Sheet

Company	CrossChem Limited
Address	100 Westwood Place, Brentwood, TN 37027, United States
Telephone	+1 615 716 3510
Email	regulatory@crosschem.net
Website	www.crosschem.net

1.4 Emergency Telephone Number

CHEMTREC (24-hour)	+1 800-424-9300 (US/Canada); +1 703-527-3887 (International, collect)
CHEMTREC Contract No.	CCN5881

2. HAZARDS IDENTIFICATION

2.1 Classification of the Substance or Mixture

Classification according to Regulation (EC) No 1272/2008 (CLP) and OSHA Hazard Communication Standard (29 CFR 1910.1200):

Hazard Class	Category	Hazard Statement
Skin Corrosion / Irritation	Category 3	H316 – Causes mild skin irritation
Serious Eye Damage / Eye Irritation	Category 2A	H319 – Causes serious eye irritation

[REVIEW FLAG: The legacy SDS labeled the eye hazard "H318 – Causes serious eye irritation," which is internally inconsistent (H318 = serious eye damage, requiring "Danger" + GHS05). It has been corrected to H319 (Eye Irrit. 2A) to match the GHS07 pictogram and "Warning" signal word. H316 is an OSHA HCS statement with no EU CLP equivalent — confirm treatment for EU markets.]

2.2 Label Elements

Signal Word:	WARNING

Hazard Statements:

H316	Causes mild skin irritation.

H319	Causes serious eye irritation.

Precautionary Statements:

P262	Do not get in eyes, on skin, or on clothing.
P264	Wash skin thoroughly after handling.
P280	Wear protective gloves (butyl), protective clothing, eye protection, and face protection.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313	If skin irritation occurs: Get medical advice/attention.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P501	Dispose of contents and container in accordance with local, regional, national, and international regulations.

2.3 Other Hazards

May cause possible kidney effects on repeated exposure (see Section 11). Does not meet the criteria for PBT or vPvB per Annex XIII of REACH.

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Component	CAS No.	EC No.	Conc. %	CLP Classification
Ethylene cyanohydrin	109-78-4	203-704-8	≥ 98.5	Skin Irrit. 3 (H316); Eye Irrit. 2A (H319)

Ethylene cyanohydrin: molecular weight 71.08 g/mol; molecular formula C_3H_5NO. *For the full text of H-statements referenced above, see Section 16.*

4. FIRST AID MEASURES

4.1 Description of First Aid Measures

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation persists.

Skin Contact: Immediately flush with water. Remove contaminated clothing and shoes. Get medical attention if irritation persists. Professionally launder clothing and shoes before reuse.

Inhalation: Remove to fresh air. If symptoms develop, seek immediate medical attention. If not breathing, give artificial respiration.

Ingestion: Seek medical attention. Do not induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed

May cause irritation of the eyes and skin. Repeated or prolonged exposure may be associated with kidney effects (see Section 11).

4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed

Treatment should be directed at preventing absorption, treating symptoms, and providing supportive therapy.

5. FIREFIGHTING MEASURES

5.1 Extinguishing Media

Suitable	Dry chemical or carbon dioxide (CO_2). For large fires use water spray, fog, or foam.
Unsuitable	Do not use a solid water jet.

5.2 Special Hazards Arising from the Substance or Mixture

Flash Point	265 °F / 129.4 °C (Cleveland Closed Cup)
Explosive Limits	LEL / UEL: not determined
Autoignition Temperature	Not determined

Hazardous Combustion Products: Smoke, soot, carbon monoxide, carbon dioxide, and oxides of nitrogen.

Fire and Explosion Hazards: Vapors can travel to a source of ignition and flash back. During a fire, irritating and highly toxic gases may be generated.

5.3 Advice for Firefighters

Firefighters must wear NIOSH-approved positive-pressure self-contained breathing apparatus (SCBA) and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment, and Emergency Procedures

Isolate the hazard area and keep unnecessary and unprotected personnel from entering. Eliminate all sources of ignition. Wear appropriate personal protective equipment as described in Section 8.

6.2 Environmental Precautions

Prevent entry into drains, sewers, soil, and bodies of water.

6.3 Methods and Material for Containment and Cleaning Up

Stop discharge if safe to do so. Cover spills with absorbent clay or sawdust and place in closed chemical waste containers. Dispose of according to applicable local, state/regional, and federal regulations. Spills exceeding a component's reportable quantity must be reported to the National Response Center (1-800-424-8802).

6.4 Reference to Other Sections

See Section 8 for exposure controls and Section 13 for disposal considerations.

7. HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Wash thoroughly after handling. Avoid contact with eyes, skin, and clothing. Wash contaminated goggles, face shield, and gloves. Professionally launder contaminated clothing before reuse.

7.2 Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions: Store in a cool, dry, well-ventilated area away from heat, ignition sources, and direct sunlight. Keep containers tightly closed.

Transfer: Follow good manufacturing and handling practices.

Incompatibilities: Amines, oxidizers, acids, and strong bases.

Empty Container Precautions: Empty containers may retain product residue and remain hazardous. Follow all label precautions until containers are professionally cleaned or destroyed.

7.3 Specific End Use(s)

No uses are specified beyond those identified in Section 1.2.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Exposure Controls

Occupational Exposure Limits: No ACGIH TLV or OSHA PEL established for the regulated components.

Engineering Controls: Local exhaust ventilation is recommended where vapors or mists can be released.

Personal Protective Equipment:

Eye / Face Protection	Chemical splash goggles (EN 166 / ANSI Z87.1). An eye-wash facility should be readily available.
Skin / Hand Protection	Protective clothing and appropriate impervious gloves (butyl recommended); consult glove manufacturer for the proper type.
Respiratory Protection	Avoid breathing vapor and/or mists. Where needed, use NIOSH/MSHA-approved (US) respiratory protection. High concentrations may require SCBA or a supplied-air respirator. Programs must comply with 29 CFR 1910.134 (US).

Hygiene Measures: Wash thoroughly after handling. Do not eat, drink, or smoke in work areas.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties

Physical State	Liquid
Appearance	Colorless
Odor	Characteristic
pH	Not applicable
Boiling Point	455 °F / 235 °C
Melting / Freezing Point	-51 °F / -46.1 °C
Flash Point	265 °F / 129.4 °C (Cleveland Closed Cup)
Vapor Pressure	0.02 hPa at 20 °C (OECD 104, dynamic method)
Solubility in Water	Completely soluble
Relative Density / Specific Gravity	Not determined
VOC Content	Not determined
Non-Volatile Content (% w/w)	100
Explosive Properties	Not explosive
Oxidizing Properties	Not oxidizing

The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

10.1 Reactivity
No dangerous reactions known under recommended handling conditions.

10.2 Chemical Stability
Stable under normal conditions of use.

10.3 Possibility of Hazardous Reactions
Hazardous polymerization will not occur.

10.4 Conditions to Avoid
High temperatures and ignition sources.

10.5 Incompatible Materials
Amines, oxidizers, acids, and strong bases.

10.6 Hazardous Decomposition Products
Carbon monoxide, carbon dioxide, and oxides of nitrogen.

11. TOXICOLOGICAL INFORMATION

11.1 Information on Hazard Classes as Defined in Regulation (EC) No 1272/2008
Ethylene cyanohydrin may cause possible kidney damage. It is not readily hydrolyzed in the body to release cyanide. Mice and rats fed ethylene cyanohydrin for 78 weeks had lower body weights and red and white blood cell counts than controls.

Acute Toxicity (ethylene cyanohydrin):

Route	Species	Value	Source
Oral	Rat	LD50 = 10,000 mg/kg	Ethylene cyanohydrin
Oral	Mouse	LD50 = 1,800 mg/kg	Ethylene cyanohydrin
Dermal	Rabbit	LD50 = 5,000 mg/kg	Ethylene cyanohydrin

Skin / Eye Irritation: Classified as Skin Irrit. 3 (H316) and Eye Irrit. 2A (H319).

Carcinogenicity / Mutagenicity / Reproductive Toxicity: No component is identified as a carcinogen by IARC, NTP, OSHA, or ACGIH. Not classified.

Aspiration Hazard: Not classified.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No aquatic toxicity data available on this product.

12.2 Persistence and Degradability
No data available.

12.3 Bioaccumulative Potential
No data available.

12.4 Mobility in Soil
No data available.

12.5 Results of PBT and vPvB Assessment
PBT/vPvB assessment not available as a chemical safety assessment was not required/not conducted.

12.6 Other Adverse Effects
No data available.

13. DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods
Product: Dispose of in accordance with all applicable local, state/regional, national, and international regulations. Recommended order of preference: (1) recycle or rework, if feasible; (2) incinerate at an authorized facility; or (3) treat at an acceptable waste treatment facility.

Contaminated Packaging: Federal regulations may apply to empty containers; state and/or local regulations may be different.

14. TRANSPORT INFORMATION

US DOT / IATA / IMDG / ADR-RID: Not regulated for transport.

UN Number	None (not regulated)
Proper Shipping Name	Not regulated for transport
Transport Hazard Class	None
Packing Group	None

15. REGULATORY INFORMATION

15.1 Safety, Health, and Environmental Regulations/Legislation Specific for the Substance or Mixture
United States:

OSHA HCS (29 CFR 1910.1200)	Classified as hazardous. This SDS conforms to the May 2024 amendment (89 FR 44144; effective July 19, 2024).
SARA Title III, §311/312	Immediate (acute) health hazard; delayed (chronic) health hazard.
SARA Title III, §302 / §313	No components subject to reporting.
TSCA Inventory	Listed on the TSCA Inventory (also on EINECS, Korea, and Japan inventories).
State Right-to-Know (PA / NJ)	Ethylene cyanohydrin (CAS 109-78-4) listed.
California Proposition 65	Not listed.

Canada:

WHMIS 2015 (HPR)	Skin Irritation – Category 3 (H316); Eye Irritation – Category 2A (H319). Complies with the Hazardous Products Regulations (SOR/2015-17).
DSL / NDSL	Listed on the Domestic Substances List (DSL).

European Union / United Kingdom:

SDS Format – (EU) 2020/878	Prepared in accordance with Commission Regulation (EU) 2020/878 amending Annex II of REACH.

CLP – (EC) No 1272/2008	Classified and labeled as shown in Section 2 (H316 has no CLP equivalent — see review flag).
REACH / UK REACH	Coverage applicable to product supplied through CrossChem Limited's authorized distribution channels.

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has not been carried out for this substance.

16. OTHER INFORMATION

Full Text of H-Statements Referenced in Sections 2 and 3

H316	Causes mild skin irritation.
H319	Causes serious eye irritation.

Hazard Rating Systems

Category	HMIS III	NFPA 704
Health	2	2
Flammability	1	1
Physical Hazard / Reactivity	0	0
Personal Protection	X (consult supervisor)	—

Rating scale: 0 = minimal, 4 = severe. Health rating reflects chronic (kidney) effects.

Key to Abbreviations and Acronyms

Acute Tox.	Acute toxicity
ACGIH	American Conference of Governmental Industrial Hygienists
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS	Chemical Abstracts Service
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (US)
CLP	Classification, Labelling and Packaging Regulation (EC) No 1272/2008
DOT	Department of Transportation (US)
DSL	Domestic Substances List (Canada)
EC	European Community
ECHA	European Chemicals Agency
Eye Dam.	Serious eye damage
Eye Irrit.	Eye irritation
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
HMIS	Hazardous Materials Identification System
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods Code
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health (US)
NTP	National Toxicology Program (US)
OSHA	Occupational Safety and Health Administration (US)
PBT	Persistent, bioaccumulative, and toxic
REACH	Registration, Evaluation, Authorization and Restriction of Chemicals
SARA	Superfund Amendments and Reauthorization Act
Skin Corr.	Skin corrosion
Skin Irrit.	Skin irritation
STOT SE	Specific target organ toxicity – single exposure

STOT RE	Specific target organ toxicity – repeated exposure
SVHC	Substance of Very High Concern
TSCA	Toxic Substances Control Act (US)
UN	United Nations
vPvB	Very persistent and very bioaccumulative
WHMIS	Workplace Hazardous Materials Information System (Canada)

Revision Information

Version	3.0
Revision Date	July 9, 2026
Supersedes	Version 2.0 (February 6, 2024)
Summary of Changes	Reformatted to current CrossChem Limited SDS template; expanded to the full 16-section structure. Eye hazard corrected from the mislabeled H318 to H319 (Eye Irrit. 2A) to match the GHS07 pictogram and “Warning” signal word (see Section 2 flag). Supplier legal name standardized to CrossChem Limited. Section 15 expanded (SARA, WHMIS 2015, REACH/UK REACH).

Product Use: Chemical intermediate.

Disclaimer

The information contained herein relates only to the specific material identified and is believed by CrossChem Limited to be accurate and reliable as of the date of issue. However, no representation, guarantee, or warranty, express or implied, is made as to the accuracy, reliability, or completeness of the information. CrossChem Limited shall not be liable for any damage resulting from handling or contact with this product. Users are responsible for satisfying themselves as to the suitability and completeness of this information for their particular application and for compliance with all applicable laws and regulations. This SDS supersedes all previous editions for this product.

— End of Safety Data Sheet —