

SAFETY DATA SHEET

1. Product and Company Identification

Product Name: **Light Check LCR-450 (Visible dye penetrant “Cleaning liquid”)**
 Company Name: Denshijiki Industry Co., Ltd.
 Address: 5-6-20 Ukima, Kita-Ku, Tokyo
 Section in Charge: Development department
 Telephone: +81-3-5970-8681 FAX: +81-3-5970-8680
 Emergency Telephone: Same as the section in charge
 Date of Creation: June 1, 2004 Date of Revision: January 21, 2021
 Reference Number: SDS15118-08e
 Product Code: 15118
 Recommended Uses and Restrictions on Use: Dye penetrant testing (cleaning liquid, solvent remover)

2. Hazards Identification

GHS Classification

Physical Hazards	Aerosols	Category 1
Health Hazards	Acute toxicity (oral)	Classification not possible
	Acute toxicity (dermal)	Classification not possible
	Acute toxicity (inhalation: vapors/mist)	Classification not possible
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2B
	Respiratory Sensitization	Classification not possible
	Skin sensitization	Classification not possible
	Germ cell mutagenicity	Classification not possible
	Carcinogenicity	Classification not possible
	Reproductive toxicity	Classification not possible
	Reproductive toxicity/effects on or via lactation	Classification not possible
	Specific target organ toxicity (single exposure)	Category 3 (airway irritant, anesthetic effect)
	Specific target organ toxicity (repeated exposure)	Classification not possible
Environmental Hazards	Aspiration hazard	Category 1
	Hazardous to the aquatic environment (acute)	Category 1
	Hazardous to the aquatic environment (chronic)	Category 1
	Hazardous to the ozone layer	Classification not possible

GHS Label Elements



Pictograms:

Signal Word: Danger

Hazard Statement: Extremely flammable aerosol
 Pressurized container: may burst if heated
 Causes skin irritation
 Causes eye irritation
 May cause respiratory irritation
 May cause drowsiness or dizziness
 May be fatal if swallowed and enters airways
 Very toxic to aquatic life with long lasting effects.

Precautionary Statement:

Prevention	<p>Keep away from ignition sources such as heat, sparks, open flames and hot objects. No smoking.</p> <p>Do not spray on an open flame or other ignition source.</p> <p>Do not pierce or burn, even after use.</p> <p>Avoid breathing gas, mist, vapor and spray.</p> <p>Wash hands thoroughly after handling.</p> <p>Use only outdoors or in a well-ventilated area.</p> <p>Avoid release to the environment.</p> <p>Wear protective gloves/eye protection/face protection/protective clothing.</p>
Response	<p>IF SWALLOWED: Immediately call a POISON CENTER/doctor.</p> <p>Do NOT induce vomiting.</p> <p>IF ON SKIN: Wash with plenty of water and soap.</p> <p>IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>If eye irritation persists: Get medical advice/attention.</p> <p>Call a POISON CENTER/doctor, if you feel unwell.</p> <p>If skin irritation occurs: Get medical advice/attention.</p> <p>Take off contaminated clothing and wash it before reuse.</p> <p>Collect spillage.</p>
Storage	<p>Store in a well-ventilated place. Keep container tightly closed.</p> <p>Store locked up.</p> <p>Protect from sunlight. Do not expose to temperatures exceeding 40°C/104°F.</p>
Disposal	<p>Dispose of contents/container at an approved waste disposal plant in accordance with local/regional/national regulations.</p>

Other hazards not categorized by GHS classification

Contact with liquefied gas may cause frostbite

3. Composition/Information on Ingredients

Substance/Mixture: Mixture

Chemical Name or Common Name	Content (%)	CAS No.
n-heptane	45-55	142-82-5
LPG (Liquefied Petroleum Gas)		
Propane	10-20	74-98-6
n-Butane	20-30	106-97-8
i-Butane	20-30	75-28-5

4. First Aid Measures

- IF INHALED : Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER/doctor, if you feel unwell.
- IF ON SKIN : Take off immediately all contaminated clothing.
Rinse for at least 15 minutes with lukewarm slowly flowing water.
If skin irritation occurs, get medical advice/attention.
Wash contaminated clothes before reuse.
- IF IN EYES : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Rinse for at least 15 minutes, and then get medical attention.
- IF SWALLOWED : Call a POISON CENTER/doctor, if you feel unwell.
If the product remains in the mouth, rinse thoroughly.
Do NOT induce vomiting.
- Most Important Signs and Symptoms, Acute and Delayed : Inhaled: hypesthesia, headache
Skin: dry skin
Eyes: redness, pain
Ingested: gastrospasm, burning sensation, nausea and vomiting

5. Firefighting Measures

- Extinguishing Media : Small fire: Carbon dioxide, powder extinguisher, water sprinkling and foam extinguisher.
Large fire: Water sprinkling, sprayed water and foam extinguisher
- Inappropriate Extinguishing Media : Straight stream of water
- Specific Hazards : May explode if aerosol container is at the scene of a fire.
Extremely flammable and easily ignited by heat, spark and flame.
May cause vapor-explosion indoors, outdoors or in a sewage trench.
May generate irritant, poisonous, or corrosive gas in a fire.
- Special Firefighting Procedures : Extremely low flash point: Use water if other extinguishing media are not effective.
Remove containers from the fire area, if it can be done safely.
If not, spray containers and the surrounding area with water to keep them cool.
Conduct firefighting activities from the most distant place that allows it to be done effectively using an unmanned hose holder or a nozzle with a monitor.
Keep cooling containers with plenty of water even after the fire is extinguished.

Protection of Firefighters : Wear appropriate protective equipment to avoid inhalation of toxic gases.
Fight a fire from upwind.

6. Accidental Release Measures

Personal Precautions,
Protective Equipment and
Emergency Procedures : Operators must wear proper protective gear (refer to 8. Exposure
Controls/Personal Protection) and avoid contact with the eyes and skin, and gas
inhalation.
When leaking (spraying), handle from upwind. Keep the leaking spot facing up.
Let the gas spray out completely and then perform the subsequent procedures.
Quickly remove nearby ignition sources, high-temperature objects and
flammables. Evacuate anyone who is downwind and keep everyone out except
authorized persons.
Ventilate before entering the restricted area.

Environmental Precautions : Avoid draining to drainage trench, sewage trench, basement or a closed space.
Be careful not to discharge into rivers or anywhere else that would affect the
environment.

Method and Materials for
Containment and
Cleaning Up : Use tools whose materials do not generate sparks upon impact or due to static
electricity.
For small leaks, collect the material by absorbing the released material with soil,
sand, or non-combustible material.
For large leaks, put sand around the leakage to keep it from flowing out.
Process contaminated items and waste according to relevant regulations.

Measures to Prevent
Secondary Accidents : Inform relevant organizations immediately to prevent further accidents and
expansion.
Remove nearby potential ignition sources immediately and prepare fire
extinguishing media.
Do not walk on the released material unnecessarily.

7. Handling and Storage

Handling

Technical Measures : Amounts larger than the designated amount must be handled in a factory, a
storage facility, or a laboratory in compliance with the standards required by the
relevant regulations.
Connect the equipment to ground and use explosion-proof electric appliances as
an anti-static measure.
Do not use high-temperature objects, sparks and fire nearby. - No smoking.
Take engineering measures and use protective equipment as described in
Section 8. Exposure Controls/Personal Protection.
Provide local and general ventilation as described in Section 8. Exposure
Controls/Personal Protection.

Precautions for Safe
Handling : Do not use things that generate fire, sparks and arcs or high-temperature objects.
Do not spray at an open flame or high-temperature incandescent objects.
Use this substance with one's back facing upwind to prevent it from being
blown back on the user.
The container may rupture if stored in a high-temperature place.
Avoid contact, inhalation, or ingestion. Do not get in eyes. Wash hands
thoroughly after handling.

Avoid contact with oxidizing agents because of the combustibility.

Storage

- Proper Storage Conditions** : Store in a cool, well-ventilated place, away from direct sunlight. Keep containers sealed.
 May leak or spray out if containers get rusty. Avoid storing it in a humid spot.
 Store away from fire and heat sources.
 Do not store where the temperature exceeds 40°C.
 Use explosion-proof grounded electric appliances if using them in the storage area.
 Store away from oxidizing agents because of the combustibility.
 Store locked up.
- Safe Packaging Materials** : Use containers regulated by the High Pressure Gas Safety Act and other regulations.

8. Exposure Controls/Personal Protection

- Control Levels** : Not established
- Permissible Exposure Levels**
- Japan Society for Occupational Health (2015 version) : n-heptane...200 ppm, 820 mg/m³, butane...500 ppm, 1,200 m/m³
- ACGIH (2008 Version) : TLV-TWA
 n-heptane...400 ppm, propane...1,000 ppm, butane...1,000 ppm
 TLV-STEL
 n-heptane...500 ppm
- Engineering Measures** : In an indoor, inadequately ventilated workplace, provide local or general ventilation equipment. Install a face-washer and safety shower.
 Do not put high-temperature and ignition sources near where this material is handled.
- Protective Equipment** : Wear the following protective equipment as needed:
- Respiratory System Protection : Organic gas masks, air-supplied respirators, breathing equipment, etc.
- Hand Protection : Protective gloves (solvent resistant, impermeable)
- Eye Protection : Eye protection, face protection.
- Skin and Body Protection : Oil-resistant (impermeable, anti-static) apron, (anti-static) protective wear, electrically conductive boots, etc.

9. Physical and Chemical Properties

	Contained liquid	Spraying agent (LPG)
Physical state	Liquid	Under atmospheric pressure: gas, in pressurized container: liquid
Color	Colorless and transparent	Colorless and transparent
Odor	Unique smell	odorless
Melting point/ freezing point	-91--90.5°C	-187.7--138.4°C
Boiling point or initial boiling point and boiling range	98--98.4°C	-42.1--0.5°C

Flammability	Flammable	Flammable
Lower and upper explosion limit / flammability limit	1.0–7.0vol%	1.8–9.5vol%
Flash point	-4°C (Closed cup)	-104.4–-73.8°C
Auto-ignition temperature	204–285°C	405–550°C
Decomposition temperature	No data available	No data available
pH	No data available	No data available
Kinematic viscosity	0.4169 mPa·s (20°C)	No data available
Solubility	Water insoluble (3.4 mg/L 25°C) Soluble in alcohols, ethers and chloroform	Slightly soluble in water
Partition coefficient n-octanol/water (log value)	log Pow 4.66	No data available
Vapor pressure	4.6–6.1 kPa (25°C)	0.278–1.275 MPa (40°C)
Density and/or relative density	0.684 (20/4°C)	0.539 (20°C)
Relative vapor density	3.46 (Air = 1)	1.895–2.538 kg/m ³ (1 MPa 15.6°C)
Particle characteristics	No data available	No data available

10. Stability and Reactivity

Chemical Reactivity and Stability	: May rupture at 40°C or higher. Internal pressure at ambient temperature: approx. 0.35 MPa May catch fire and explode by electrostatic discharge.
Possibility of Hazardous Reactions	: May rupture by heat and impact. May cause fire and explosion if mixed with oxidizing agents or other hazardous reactive chemicals. Damages some plastics, rubbers and coating agents. A flammable liquefied gas and readily forms an explosive gas when mixed with air.
Conditions to Avoid	: Storage in hot, humid spots and usage near fire.
Incompatible Materials	: Strong oxidizing agents.
Hazardous Decomposition Products	: May generate toxic gases (CO, NO _x , etc.) by burning.

11. Toxicological Information

Acute Toxicity (oral)	: LD ₅₀ = 1,500–5,000 mg/kg (mouse): n-heptane
Acute toxicity (dermal)	: LD ₅₀ = 3,000 mg/kg (rabbit): n-heptane

Acute Toxicity (inhalation)	: gas... LC ₅₀ > 55000 ppm/2 h (guinea pig): propane LC ₅₀ > 55000 ppm/4 h (guinea pig): propane LC ₅₀ > 277374 ppm/4 h (rat): n-butane Vapor... LC ₅₀ = 25–184 ppm/4 h (rat): n-heptane
Skin Corrosion and Skin Irritation	: Reported in DFGOT (vol. 11, 1998): n-heptane as "Causes irritation and dermatitis by contact with human skin" (DFGOT)
Serious Eye Damage or Eye Irritation	: Reported in IUCLID 2000: n-heptane as "Causes mild irritation in a rabbit test"
Respiratory Sensitization or Skin Sensitization	: Respiratory sensitization: No data available Skin sensitization: No data available
Germ Cell Mutagenicity	: No data available
Carcinogenicity	: Categorized as D by EPA carcinogenicity assessment (IRIS (2005)): n-heptane
Reproductive Toxicity	: No data available
Specific Target Organ Toxicity, Single Exposure	: Reported as "Has anesthetic effect on mice after 10,000–15,000 ppm inhalation exposure, and mild dizziness, etc. in humans after 1,000 ppm-exposure for 6 min.": n-heptane Reported as "Causes irritation in upper respiratory tract in mice by inhalation exposure and irritation in respiratory organs and mucosal irritation in humans": n-heptane Description in ACGIH: propane "Has anesthetic effect on humans" Description in ACGIH and Japan Society for Occupational Health recommendation: n-butane "Has anesthetic action or depresses central nervous system in humans by high concentration inhalation"
Specific Target Organ Toxicity, Repeated Exposure	: No data available
Aspiration Hazard	: No data available

12. Ecological Information

Ecotoxicity	: LC ₅₀ = 0.1 mg/L/96 h (Crustacea Mysidopsis bahia) (HSDB, 2006): n-heptane
Persistency/Degradability	: No data available
Bioaccumulative Potential	: No data available
Mobility in Soil	: No data available
Hazardous to the Ozone Layer	: No data available

13. Disposal Considerations

Dispose of after complete degassing.

Have contents/container disposed of by an industrial waste disposal contractor licensed by the prefectural governor.

Dispose of or have waste generated from effluent treatment or incineration disposed of by a waste disposal contractor in accordance with the Waste Management and Public Cleansing Act and other related laws.

14. Transport information

UN Hazard Class : 2.1
UN No. : 1950

Follow other related laws and regulations.

15. Regulatory Information

Comply with the applicable laws and regulations regarding this product in each country/region.

16. Other Information

This Safety Data Sheet was prepared in accordance with JIS Z 7253:2019 to provide users of this product with reference information to ensure safe handling. Users are responsible for taking appropriate measures for individual handling conditions with reference to this SDS.

This SDS does not represent any guarantee of safety.

Major references

Safety Data Sheets (SDS) provided by raw material manufacturers

Japanese Standards Association (JIS) JIS Z 7253:2019 "Hazard communication of chemicals based on GHS"

NITE Chemical Risk Information Platform (CHRIP)
