

SAFETY DATA SHEET

1st Edition: 14 Nov 2008
2nd Edition: 18 May 2018

Section 1 – Identification of the Substance/Mixture and of the Company/Undertaking

Product name: Ink Cartridge, Recording Ink
 Product code: NSE-25BL, NSE-40BL
 Supplier: Nihon Kohden Corporation
 Address: 1-31-4 Nishiochiai, Shinjuku-ku, Tokyo 161-8560, Japan
 Telephone number: +81 3-5996-8041
 Fax: +81 3-5996-8085
 Website for contact: <https://www.nihonkohden.com/contact/>
 Emergency telephone number: 1-800-424-9300; CHEMTREC (US)
 613-996-6666; CANUTEC (Canada)
 +81 3-5996-8022 (Outside US and Canada)
 Recommended use and restrictions on use: Recording ink

Section 2 – Hazards Identification

Outline of emergency: Health hazard substance
 GHS classification:

	Item	Classification
Health hazards	Acute toxicity (Oral)	Not classified
	Acute toxicity (Skin)	Not classified
	Acute toxicity (Inhalation: gas)	Classification not possible
	Acute toxicity (Inhalation: vapours)	Classification not possible
	Acute toxicity (Inhalation: dust, mist)	Classification not possible
	Skin corrosion/irritation	Not classified
	Serious eye damage/eye irritation	Not classified
	Respiratory sensitization or skin sensitization	Not classified
	Germ cell mutagenicity	Not classified
	Carcinogenicity	Category 1A
	Toxic to reproduction	Not classified
	Target organ toxicity (Single exposure)	Not classified
	Target organ toxicity (Repeated exposure)	Not classified
	Aspiration hazard	Classification not possible
Environmental hazards	Aquatic toxicity (Acute)	Classification not possible
	Aquatic toxicity (Chronic)	Classification not possible

GHS label elements:

Pictograms or hazard symbols:



Signal word: Danger
 Hazard statement: May cause cancer
 State other hazards: Harmful when ingested.
 Can be harmful in contact with the skin.
 Slight irritation on contact with the skin.

Precautionary statement:

Prevention:	Obtain instruction for use before use. Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area. Do not eat, drink or smoke when using this product. Do not breathe mist/vapours/spray. Use personal protective equipment as required. Wear gloves, eye/face protection. Contaminated clothing should not be allowed out the workplace. Wash the hands thoroughly after handling. Avoid release to the environment.
Response:	If skin contact occurs, wash with plenty of soap and water. If skin irritation or rash occurs, see a physician.
Storage:	Protect from sunlight. Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.
Disposal:	Material and container must be disposed by the specified waste disposer under national registration.

Section 3 – Composition/Information on Ingredients

Substance/mixture:	Mixture
Composition:	(Ingredients of the recording ink)

Chemical name	CAS No.	Composition (w%)
Dye	CBI	CBI
Glycerin	56-81-5	22.0
Polyethylene glycol	25322-68-3	2.0
Formalin (for Formaldehyde)	50-00-0	0.5 to 0.75

CBI: Confidential business information

Section 4 – First Aid Measures

Inhalation:	Remove victim to fresh air and keep at rest in a position comfortable for breathing. See a physician if the victim continues to feel unwell.
Skin contact:	Wash immediately with plenty of soap and water. If there are any signs of inflammation, see a physician.
Eye contact:	Rinse cautiously with water for several minutes. Contact lenses should be removed. Continue rinsing. If eye irritation persists, see a physician.
Ingestion:	Rinse mouth. Immediately see a physician.
Protection for first-aid responders:	Wear an appropriate protective equipment according to the situation.

Section 5 – Fire-fighting Measures

Suitable extinguishing media:	Powdery/bubble extinguishing media, carbon dioxide, watering, sand
Unsuitable extinguishing media:	No data
Specific hazards:	Harmful gases such as carbon monoxide, nitrogen oxide or sulfur oxides may be generated when the product is burnt or exposed to high temperature.

Special fire fighting procedures:	<p>Irritating or toxic gases may be generated when there is a fire.</p> <p>Prohibit entry to near the scene of a fire or the surrounding area by anyone other than the parties concerned.</p> <p>If the product containers can be moved, move them to a safe place immediately.</p> <p>Cool down the surrounding product containers and facility with water spray to prevent fire from spreading.</p> <p>Extinguish the fire from windward.</p> <p>Use an appropriate extinguishing method according to circumstances.</p>
Special protective equipment for firefighters:	Wear appropriate protective equipment such as gloves, goggles, mask, oxygen tank or overall.

Section 6 – Accidental Release Measures

Personal precautions, handling accidental leakage of the product and wearing protection:	<p>Wear an appropriate protective equipment. Do not get in eyes or on skin and avoid breathing vapours.</p> <p>Wear clothes that sealing up is high and impermeable protection when a fire does not occur.</p> <p>Do not touch the leakage product. Do not walk in the leakage product.</p> <p>Prohibit the entries other than parties concerned.</p> <p>Stay in the windward.</p> <p>Leave the low ground.</p> <p>Ventilate the room before you come in the place sealed up.</p>
Environmental precautions:	<p>Do not release to the environment.</p> <p>Do not drain the product into public drainage or waterway.</p> <p>Ventilate for the room and avoid the inhalation of vapours.</p>
Collection and removal:	Wipe with paper or cloth and collect product to seal up a possible, empty container.

Section 7 – Handling and Storage

Handling:	
Technical measure:	<p>Do not use the product that the expiration date for use passed.</p> <p>Use this product ahead of time after opening the cap.</p> <p>Contaminated clothing should not be allowed out the workplace.</p> <p>Prevent the liquid from leaking. Prevent vapours being emanated.</p>
Ventilation:	Use only outdoors or in a well-ventilated area.
Safety precautions:	<p>Obtain instruction for use before use.</p> <p>Do not handle until all safety precautions have been read and understood.</p> <p>Do not eat, drink or smoke when using this product.</p> <p>Prevent the liquid from leaking. Prevent vapours being emanated.</p> <p>Do not contact, inhale and swallow this product.</p> <p>Do not breathe mist/vapours/spray.</p> <p>Wash the hands thoroughly after handling.</p>
Storage:	
Technical measure:	<p>Make a structure of the floor for storage place that dose not infiltrate water.</p> <p>Close the cap of the attachment and seal up the container. Avoid direct sunlight.</p> <p>Store at a cool and well ventilation place.</p>
Storage condition:	Keep in the place where the infant is not able to touch.

Section 8 – Exposure Controls/Personal Protection

Exposure limits:	Formaldehyde: 0.3 ppm (ACGIH (TLV-STEL) (2005))
Inhalation prevention:	Wear respiratory protection if the vapours or mist of ink has been generated.
Ventilation:	Ventilate appropriately.
Protective equipment:	Wear goggles, gloves and overalls.

Section 9 – Physical and Chemical Properties

Appearance:

Physical state:	Black liquid
Odor:	Slight
pH:	6.0 to 8.0
Boiling point:	101°C (214°F)
Melting point:	17.5 mmHg at 25°C (77°F)
Specific gravity:	1.05 to 1.10
Solubility:	Excellence

Section 10 – Stability and Reactivity

Stability:	Stable at room temperature.
Conditions to avoid:	High temperature, high humidity, heating
Incompatible substance:	Oxidant (The polymerization occurs attended with generation of heat.)

Section 11 – Toxicological Information

Acute toxicity (Oral) :	Glycerin oral, rat LD ₅₀ ≥ 5000 mg/kg (SIDS (2002)) Formaldehyde oral, rat LD ₅₀ 600, 700, 800 mg/kg (SIDS (2002))
Acute toxicity (Skin) :	Glycerin dermal, rabbit LD ₅₀ ≥ 5000 mg/kg (SIDS (2002)) Formaldehyde dermal, rabbit LD ₅₀ 270 mg/kg (EHC 89 (1989))
Acute toxicity (Inhalation) :	Formaldehyde GHS: Category 2 inhalation, rat (gas) LC ₅₀ 480 ppm (SIDS (2002))
Skin corrosivity:	Glycerin Based on the testing data of rabbit skin irritation tests, there was no evidence of irritation (SIDS (2002)). Formaldehyde GHS: Category 2 Based on the testing data of rabbit skin irritation tests : “mild to moderate” and data on human health effects (EHC 89 (1989)).
Serious damage and irritant property for eyes:	Glycerin Based on the testing data of rabbit eye irritation tests, slight corneal irritation was observed. However the effects were fully reversed by 48 h (SIDS (2002)) and therefore, glycerin was judged to be non-eye irritant. Formaldehyde GHS: Category 2A Based on epidemiological cases (EHC 89 (1989)) the results of animal eye irritation tests (SIDS (2002), EHC 89 (1989)) (moderate irritation).
Respiratory sensitization:	Formaldehyde GHS: Category 1 Based on the data on human health effects (EHC 89 (1989)) and the classification by the Japan Society for Occupational Health.

Skin sensitization:	<p>Glycerin</p> <p>Despite extensive exposure to glycerol in preparations applied to the skin, there are no reports of humans showing adverse skin reactions (SIDS (2002)).</p> <p>Formaldehyde</p> <p>GHS: Category 1</p> <p>Epidemiological cases (EHC 89 (1989), CERI-NITE Hazard Assessment No.71 (2005)) and the classification by the Japan Society for Occupational Health and the Japanese Society for Contact Dermatitis.</p>
Germ cell mutagenicity:	<p>Formaldehyde</p> <p>GHS: Category 2</p> <p>Based on the negative data on germ cell mutagenicity tests in vivo (chromosome aberration tests in the spermatocytes of mice), positive data on somatic cell mutagenicity tests in vivo (micronucleus and chromosome aberration tests) (exclusively for gastrointestinal/alveolar cells exposed directly to formaldehyde), and absence of data on germ cell genotoxicity tests in vivo, described in CERI-NITE Hazard Assessment No.71 (2005) and SIDS (2004). Some dominant lethal studies in rats show slightly positive (ambiguous), which is not taken into account, because they are not considered valid for evaluation purposes.</p>
Carcinogenicity:	<p>Formaldehyde</p> <p>GHS: Category 1A</p> <p>IARC (2005) : Group 1 (carcinogenic to humans)</p>
Reproduction toxicity:	<p>Formaldehyde</p> <p>Classification not possible</p>
Certain target organ/Systemic toxicity (single exposure):	<p>Formaldehyde</p> <p>GHS: Category 1 (nervous system, respiratory system)</p> <p>Based on the human evidence including "irritation to the respiratory tract ACGIH" (7th, 2001), "irritation to the respiratory tract, a decrease in the sensitivity of the nasal and palatine nerve, adverse effects on the hypothalamus" (CERI-NITE Hazard Assessment No.71 (2005)), and the evidence from animal studies including "irritation to the respiratory tract, general convulsions (muscles, etc.), pulmonary edema" (SIDS (2004)).</p>
Certain target organ/Systemic toxicity (repeated exposure):	<p>Formaldehyde</p> <p>GHS: Category 1 (respiratory organs, central nervous system)</p> <p>In epidemiological study, respiratory effects caused by irritation and effects on the central nervous system were reported (ECETOC TR1 (1979)).</p> <p>In animal experiment, squamous metaplasia in the nasal tissues, squamous metaplasia in the larynx, inflammation in the tracheal lumen, body weight loss, metaplasia of the bronchial epithelium, dyspnea, restlessness, hunched posture and death were reported (CERI Hazard Data Book (1997)). Based on these effects, the respiratory organs and central nervous system are considered to be the target organs.</p> <p>These effects were observed within the guidance values for Category 1 in the repeated-dose study.</p>
Aspiration hazards:	No data
Other:	No data

Section 12 – Ecological Information

Acute aquatic toxicity:	<p>Glycerin</p> <p>Fish: Carassius auratus (Goldfish) 24hr LC₅₀ > 5000 mg/L</p> <p>Crustacea: Daphnia magna EC₅₀ > 10000 mg/L (SIDS (2002))</p> <p>Formaldehyde</p> <p>Fish: striped bass 96hr LC₅₀ = 1.8 mg/L (CICAD40, 2002)</p>
Chronic aquatic toxicity:	<p>Formaldehyde</p> <p>Degrades rapidly (the Decomposition by BOD: 91% (Existing Chemical Safety Inspections Data)) and has low bio-accumulation.</p>

Persistence and degradability:	No data Formaldehyde Degrades rapidly.
Bioaccumulation potential:	No data
Mobility in soil:	In view of the properties of the product's physical chemistry, the possibility exists of movement within the soil.
Hazardous to the ozone layer:	Does not contain substances listed on the annex to the Montreal Protocol.

Section 13 – Disposal Considerations

Disposal of residue:	Follow local laws for disposing of waste. Notify the transactor of the dangers and hazardous properties of the waste.
Pollution container and wrapping:	Follow local laws for disposing of waste. Dispose the container and wrapping after cleaning. Remove contents completely when you dispose of the empty container.

Section 14 – Transport Information

UN number, UN Class:	Not applicable
Marine pollutant:	No

Regulation depends on region and transportation mode.

International regulations:

Ocean transportation:	IMO-IMDG Code: Not restricted.
Air transportation:	ICAO TI/IATA-DGR: Not restricted.
Ground transportation:	ADR/RID (Europe): Not restricted.

National regulations (Japan):

Ground transportation:	Fire Service Act, Industrial Safety and Health Act: Not restricted.
Ocean transportation:	Ship Safety Act: Not restricted.
Air transportation:	Civil Aeronautics Act: Not restricted.

Special safety precautions:

Before transport, check that there is no damage, corrosion or leakage on the product container.
Load the product without dropping, overturning or damaging it. Take load shift prevention measures.
Avoid direct sunlight and high temperature.
Transport the product in accordance with the relevant laws and regulations.

Section 15 – Regulatory Information

Handling this product according to the law that relates as a mixture that contains 0.5 w% in formaldehyde.

Section 16 – Other Information

No data

This data sheet is complete and accurate to the best of our knowledge but all information may not be covered. Any product may contain unknown harmful substances. This product must be handled carefully and used under the responsibility of the user, taking appropriate safety measures.