

Material Safety Data Sheet

Ink Cartridge (M) (MSDS:H086077-00-03-NA-E)

Section 1. Chemical product and company identification

Common name : Ink Cartridge(M)
Code : H086077-00
Material uses : Ink
Supplier/ Manufacturer : NK Works Co., Ltd, 579-1, Umehara, Wakayama-shi, 640-8550, Japan
 Emergency: +81 73 456 3969 Phone: +81 73 456 3969 Fax: +81 73 456 3991
In case of emergency : CHEMTREC,U.S : (800)424-9300 International : (703)527-3887

Section 2. Hazards identification

Physical state : Liquid.
Emergency overview : WARNING!
 CAUSES EYE IRRITATION. MAY CAUSE SKIN IRRITATION.

This MSDS shows the hazards linked with the content of the cartridge. The cartridge itself, does not present any hazard when properly used.
 Avoid contact with skin and clothing. Wash thoroughly after handling.

Routes of entry : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Eyes : Severely irritating to eyes. Risk of serious damage to eyes.
Skin : Slightly irritating to the skin.
Inhalation : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Potential chronic health effects : CARCINOGENIC EFFECTS: Classified 3 (Not classifiable for humans.) by IARC [Triethanolamine].
 MUTAGENIC EFFECTS: Not available.
 TERATOGENIC EFFECTS: Not available.

Medical conditions aggravated by over-exposure : Repeated or prolonged exposure is not known to aggravate any medical condition.

See toxicological information (section 11)

Section 3. Composition, Information on Ingredients

	CAS number	% by weight	Classification					
			UN number	IDLH	H	F	R	Special
United States								
Glycerin, (Glycerol)	56-81-5	5 - 10						
2-[2-(2-butoxyethoxy)ethoxy]ethanol	143-22-6	5 - 10						
Triethylene glycol	112-27-6	1 - 5						
Canada								
Glycerin, (Glycerol)	56-81-5	5 - 10						
2-[2-(2-butoxyethoxy)ethoxy]ethanol	143-22-6	5 - 10						
Triethylene glycol	112-27-6	1 - 5						
Mexico								
Glycerin, (Glycerol)	56-81-5	5 - 10	Not regulated.	-	0	1	0	
2-[2-(2-butoxyethoxy)ethoxy]ethanol	143-22-6	5 - 10	Not regulated.	-	1	1	0	
Triethylene glycol	112-27-6	1 - 5	Not regulated	-	1	1	0	

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This material is classified hazardous under OSHA regulations in the United States, the WHMIS Controlled Product Regulation in Canada and the NOM-018-STPS-2000 in Mexico.

See Chapters 8, 11 and 14 for details.

Section 4. First aid measures

- Eye contact** : In case of contact with eyes, rinse immediately with plenty of water. Get medical attention if irritation occurs.
- Skin contact** : Wash with soap and water. Get medical attention if irritation develops.
- Inhalation** : Move exposed person to fresh air. Keep person warm and at rest. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if symptoms occur.
- Notes to physician** : No specific antidote. Medical staff must contact Poison Control Center.

Section 5. Fire fighting measures

- Flammability of the product** : Non-flammable.
Use an extinguishing agent suitable for surrounding fires.
- Special protective equipment for fire- fighters** : Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face piece operated in positive pressure mode.

Section 6. Accidental release measures

- Personal precautions** : No special precaution is required. Use suitable protective equipment (section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
- Methods for cleaning up** : For small spills coming from a broken cartridge, add absorbent (soil may be used in the absence of other suitable materials), scoop up material and place in a sealable, liquid-proof container for disposal. Place unbroken cartridge in an appropriate container for disposal.

Section 7. Handling and storage

- Handling** : Wash thoroughly after handling.
- Storage** : Keep container tightly closed.

Section 8. Exposure Controls, Personal Protection

- Engineering controls** : No special ventilation requirements.
- Personal protection**
- Eyes** : Not applicable.
- Respiratory** : Not applicable.
- Hands** : Disposable vinyl gloves.



- Skin/Body** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Personal protection in case of a large spill** : **Not likely to occur, but if more than 1L of ink spills:**
Safety glasses, goggles or face shield. Impervious gloves. Full suit. Boots. Wear MSHA/NIOSH approved self-contained breathing apparatus or equivalent and full

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protective gear.

Product name United States

Glycerin, (Glycerol)

Exposure limits

ACGIH TLV (United States, 1/2006).

TWA: 10 mg/m³ 8 hour(s). Form: Mist

OSHA PEL (United States, 11/2006).

TWA: 5 mg/m³ 8 hour(s). Form: Respirable fraction

Canada

Glycerin, (Glycerol)

ACGIH TLV (United States, 1/2006).

TWA: 10 mg/m³ 8 hour(s). Form: Mist

Mexico

Glycerin, (Glycerol)

NOM-010-STPS (Mexico, 9/2000).

LMPE-PPT: 10 mg/m³ 8 hour(s). Form: Mist

Consult local authorities for acceptable exposure limits.

Section 9. Physical and chemical properties

Physical state	: Liquid.
Color	: Magenta
Odor	: Odorless.
PH	: 8.8
Boiling/condensation point	: 100°C (212°F)
Melting/freezing point	: 0°C (32°F)
Specific gravity	: 1.073
Vapor density	: >1[Air = 1]
Viscosity	: Dynamic:<500mPa·s(<500cP)
Solubility	: Miscible in water.

Section 10. Stability and reactivity

Stability and reactivity	: The product is stable.
Incompatibility with various substances	: Reactive or incompatible with the following materials: oxidizing materials.
Hazardous polymerization	: Will not occur.

Section 11. Toxicological information

Acute Effects

Eyes	: Severely irritating to eyes. Risk of serious damage to eyes.
Skin	: Slightly irritating to the skin.
Inhalation	: No known significant effects or critical hazards.
Ingestion	: No known significant effects or critical hazards.
Potential chronic health effects	: CARCINOGENIC EFFECTS: Classified 3 (Not classifiable for humans.) by IARC. [Triethanolamine] MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available.

Section 12. Ecological information

Ecotoxicity data

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Ingredient name	Species	Period	Result
Glycerin, (Glycerol)	Oncorhynchus mykiss(LC50)	96 hour(s)	54000mg/l

Products of degradation : Decomposition products may include the following materials: carbon oxides (CO, CO2) And water.

Section 13. Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Consult your local or regional authorities.

Section 14. Transport information

Classification :
Mexico / TDG/ DOT/ IMDG/ IATA: Not regulated.

Label
Not applicable.

Additional information
Not applicable.

Section 15. Regulatory information

United States

HCS Classification : Irritating material
U.S. Federal regulations : TSCA : All components listed.
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Glycerin, (Glycerol);Triethylene glycol
SARA 311/312 MSDS distribution - chemical inventory - hazard identification:
Glycerin,(Glycerol): Immediate (acute) health hazard, Delayed (chronic) health hazard;
Triethylene glycol:Immediate (acute) health hazard,Delayed (chronic) health hazard
Clean Water Act (CWA) 307: No products were found.
Clean Water Act (CWA) 311: No products were found.
Clean Air Act (CAA) 112 accidental release prevention: No products were found.
Clean Air Act (CAA) 112 regulated flammable substances: No products were found.
Clean air act (CAA) 112 regulated toxic substances: No products were found.

State regulations : **Connecticut Carcinogen Reporting**: None of the components are listed.
Connecticut Hazardous Material Survey: None of the components are listed.
Florida substances: None of the components are listed.
Illinois Chemical Safety Act: None of the components are listed.
Illinois Toxic Substances Disclosure to Employee Act: None of the components are listed.
Louisiana Reporting: None of the components are listed.
Louisiana Spill: None of the components are listed.
Massachusetts Spill: None of the components are listed.
Massachusetts Substances: The following components are listed: Glycerin, (Glycerol)
Michigan Critical Material: None of the components are listed.
Minnesota Hazardous Substances: None of the components are listed.
New Jersey Hazardous Substances: The following components are listed:

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GLYCOL ETHERS

New Jersey Spill: None of the components are listed.

New Jersey Toxic Catastrophe Prevention Act: None of the components are listed.

New York Acutely Hazardous Substances: None of the components are listed.

New York Toxic Chemical Release Reporting: None of the components are listed.

Pennsylvania RTK Hazardous Substances: The following components are listed: Glycerin, (Glycerol); GLYCOL ETHERS; ETHANOL, 2,2'-[1,2-ETHANEDIYLBIS(OXY)]BIS-

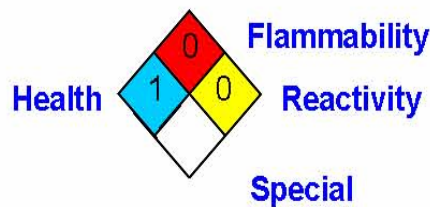
Rhode Island Hazardous Substances: None of the components are listed.

Canada WHMIS (Canada)

: Class D-2B: Material causing other toxic effects (Toxic).
DSL : All components listed.

Mexico Classification

:



International regulations International lists

: All components listed are listed on major international inventories or exempted from being listed in Australia (AICS), Europe (EINECS/ELINCS), Korea (TCCL), Japan (METI/MOL), Philippines (RA6969).

Section 16. Other information

Label requirements : CAUSES EYE IRRITATION. MAY CAUSE SKIN IRRITATION.

This MSDS shows the hazards linked with the content of the cartridge. The cartridge itself, does not present any hazard when properly used.

Hazardous Material Information System (U.S.A.)

:

Health	1
Fire hazard	1
Reactivity	0
Personal protection	B

National Fire Protection Association (U.S.A.)

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References

: ANSI Z400.1, MSDS Standard, 2004. -Manufacturer's Material Safety Data Sheet. - 29CFR Part1910.1200 OSHA MSDS Requirements. - 49CFR Table List of Hazardous Materials, UN#, Proper Shipping Names, PG. -Canada Gazette Part II, Vol. 122, No. 2 Registration SOR/88-64 31 December, 1987 Hazardous Products Act "Ingredient Disclosure List" - Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2005. - Official Mexican Standards NOM-018-STPS-2000 and NOM-004-SCT2-1994.

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Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.