Safety Data Sheet (SDS)

Printing date 5/27/2015 Prepared on 5/27/2015

1. Product and Company Identification

This product is considered to meet the definition of an "article". This Safety Data Sheet includes the information and is written based on less than 10mL of the "ink" substance or mixture impregnated in cotton filter and encapsulated in this pen-type article.

· **Product identifier**

Trade name: Metal Deletion Pen "Type F"

· **Item Number/Size/"ink" Content:**
132-2/Large/5mL, 132-1/Medium/2mL, 132-3/Fine/1mL

· **Relevant identified uses of the substance or mixture and uses advised against**
Image Deletion Pen for Lithographic Printing Plates

· **Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**
Nikken Chemical Laboratory Co., Ltd.
Sakae 2-16-1, Naka-Ku, Nagoya, Aichi 460-0008, Japan
overseas@nikken-chemical.co.jp www.nikken-chemical.co.jp
Ph. +81-52-220-1398 Fax +81-52-219-2495 for product information

· **Emergency telephone number:** Infotrac: 1-800-535-5053, 1-352-326-2510

2. Hazard(s) identification

· **GHS classification and label elements of the product:** Not applicable
This article is not classified as hazardous under the Globally Harmonized Systems of Classification and Labeling of Chemicals (GHS) as well as the OSHA Hazard Communication Standard and the Health Canada Workplace Hazardous Materials Information Standard. The reasons for the exemptions are published and contained in the GHS (ST/SG/AC.10/30/Rev.4), 29 CFR 1910.1200(b)(6)(ix) as amended Sept 14, 2009 per the Code of Federal Regulations and Canadian Hazardous Products Act part 12 section (f) as amended June 1, 2009.
This product is considered to meet the definition of an "article". This Safety Data Sheet includes the information and is written based on less than 10mL of the "ink" substance or mixture impregnated in cotton filter and encapsulated in this pen-type article. This article, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. Only if released or exposed due to use of the article in a manner not in accordance with the product's directions for use or handling precautions in the workplace it may present potential risks for health, safety and the environment. The information contained in this Safety Data Sheet is forwarded to you for your information, but is not meant to imply that the product is covered by nor is the SDS meant to comply with all requirements of the hazard communication standards.
Although none of the hazard and precautionary statements are applicable, this product should be handled with following emergency overview.

EMERGENCY OVERVIEW (for the "ink" substances contained within this pen-type article)

An "Ink" less than 10mL contained in this pen-type article is a clear, colorless liquid. The substance is very toxic and CORROSIVE and may produce acrid smoke or fumes in fire conditions. Wear equipment to protect eyes, skin and respiratory tract. Dike or absorb spills to keep the substance and run-off from entering sewer or waterways. Use water spray to cool and disperse vapors.
Special handling & workplace: NEVER LICK THE PEN TIP. Avoid contact with skin & eyes. Do not smoke, eat or drink in the workplace. Wash hands thoroughly with soap and water after handling this product. Remove/Take off contaminated clothing immediately and wash clothing before reuse. Ventilation in work area should be sufficient. Do not take internally. Keep the pen tightly capped when not in use. Do not carry the pen in your pocket. For industrial use only. Keep out of the reach of children.

3. Composition/information on ingredients

· **Substance/Preparation:** Ingredients contained within pen-type article for reference

Ingredient name	content(%)	CAS No.	ECNO
Dimethyl formamaide	30 - 40	68-12-2	200-679-5
Tetrahydrofuran	20 - 30	109-99-9	203-726-8
Hydrofluoric acid	1 - 5	7664-39-3	231-634-8
Water	10 - 30	7732-18-5	231-791-2

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4. First-aid measures

· **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
· **IF INHALED:**
Move to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTRE or doctor/physician if you feel unwell.
· **IF ON SKIN(or hair):**
Take off immediately all contaminated clothing. Rinse skin with water/shower.
Wash with plenty of soap and water. Get medical help if rash, redness or irritation develops.
· **IF IN EYES:**
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing. Get medical help immediately.
If eye irritation persists: Get medical advice/attention.
· **IF SWALLOWED:**
Rinse mouth. Do NOT induce vomiting.
Immediately call a POISON CENTER or doctor/physician.
NOTE TO PHYSICIAN: Eye exposure to Hydrofluoric acid requires continuous irrigation and immediate ophthalmologist referral. Medical treatment for dermal exposure may include the topical use of 2.5% calcium gluconate gel, benzalkonium chloride (Zephiran) solution (1:750) soaks, and/or 10% calcium gluconate intradermally. Electrocardiographic monitoring is necessary after ingestion, inhalation, or significant dermal exposure due to potential for hypocalcemia and resultant cardiac dysrythmias.

5. Fire-fighting measures

· **Suitable extinguishing media:**
In case of fire, use foam, dry powder, Carbon Dioxide.
· **Unsuitable extinguishing media:** High pressure water streams.
· **Specific fire-fighting measures:**
Apply water from a safe distance to cool and protect surrounding area.
Stand at upwind and do the fire-fighting, to avoid breathing toxic gas.
Do not discharge water of extinguishing to flow out to the environment and take the appropriate protective measures.
· **Special protective equipment and precautions for fire-fighters:**
Wear the protective equipmen and breathing apparatus.

6. Accidental release measures

· **Personnel precautions, protective equipment and emergency procedures:**
Wear proper protective equipment.
Eliminate all sources of ignition and ventilate the area.
Stand at upwind. Evacuate personnel at downwind.
· **Environmental precautions:**
Prevent spills from entering sewers, watercourses or low areas.
· **Methods and materials for neutralization, containment and cleaning up:**
Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

7. Handling and storage

· **Precautions for safe handling**
· **Preventive measures:**

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(Exposure Control for handling personnel)
Avoid contact with skin and eyes.
Wear protective gloves, protective clothing and eye protection/face protection.
Never lick the pen tip. Do not eat, drink in the workplace.
Wash hands thoroughly with soap and water after handling this article.
Avoid breathing dust/fume/gas/mist/vapours/spray.
(Protective measures against fire & explosion)
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
· **Safety Measures/Incompatibility:**
Use only with adequate ventilation.
Wear protective gloves and face/eye protection.
Wash hands thoroughly after handling.
Do not eat, drink or smoke when hadling this product.
· **Conditions for safe storage, including any incompatibilities**
· **Recommendation for storage:**
Store in a cool, well-ventilated place. Store away from heat and light. Keep pen tightly capped and closed.

8. Exposure controls/personal protection

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There is no experimentally determined data available on this article itself. The following are the adopted value(s) for the "ink" substance or mixture impregnated in cotton filter and encapsulated in this pen-type article.
Control parameters e.g. occupational exposure limit values or biological limit values
(Dimethyl formamaide)
ACGIH(2010) TWA: 10ppm, 30 mg/m3; skin – potential for cutaneous absorption
(Hydrofluoric acid)
ACGIH(2004) TWA: 0.5ppm
STEL: C 2ppm (URT, LRT, skin & eye irr; fluorosis)
(Tetrahydrofuran)
ACGIH(2002) TWA: 50ppm
STEL: 100ppm (URT irr; CNS impair; kidney dam)
Notation
(Hydrofluoric acid)
Skin
(Tetrahydrofuran)
Skin
OSHA-PEL
(Dimethyl formamaide)
TWA:10ppm, 30mg/m3
(Hydrofluoric acid)
TWA: 3ppm
(Tetrahydrofuran)
TWA: 200ppm, 590mg/m3
NIOSH-REL
(Dimethyl formamaide)
TWA:10ppm, 30 mg/m3
(Tetrahydrofuran)
TWA 200ppm, 590mg/m3; STEL 250ppm, 735mg/m3

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(Hydrofluoric acid)
TWA 3ppm, 2.5mg/m3; C 6ppm, 5mg/m3
· **Safety and Health measures:**
Do not get in eyes, on skin, or on clothing.
Wash contaminated parts thoroughly after handling.
Do not eat, drink or smoke when using this product.
Take off immediately all contaminated clothing and wash it before reuse.
Wash contaminated clothing before reuse.

9. Physical and chemical properties

· **Physical properties**
Appearance: Articles containing less than group II or III 10 ml of a packing no free visible flammable liquid absorbed into a solid material

10. Stability and reactivity

· **Stability:** Stable under normal storage/handling conditions.

11. Toxicological information

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Control parameters e.g. occupational exposure limit values or biological limit values
· **Information on toxicological effects:**
Inhalation: Toxic if inhaled. (Vapours)
Ingestion: Harmful if swallowed. May be fatal if swallowed and enters airways.
Skin contact: Causes serious skin burns.
Eye contact: Cause serious eye damage.
(Component/Adopted value)
Acute Toxicity
Oral
(Tetrahydrofuran) Oral LD-50: (Rat): 1,851 mg/kg
(Dimethylformamide) Oral LD-50: (Rat): 2,800 mg/kg
Dermal
(Dimethylformamide) Dermal LD-50: (Rabbit): 1,500 mg/kg, (Rat): 3,500 mg/kg
Inhalation
(Dimethylformamide) Vapour LC-50: (Mouse, 4hr): 4.7 mg/l (HSDB, 2005)
(Hydrofluoric acid) Vapour LC-50: (Rat, 4hr): 650 ppm (EU-RAR No.8, 2001)
Skin corrosion/irritation
(Dimethylformamide) (Human): 500 mg open; MILD
(Hydrofluoric acid) Causes severe skin burns and eye damage (Skin corrosion/irritation Category 1A-1C)
Serious eye damage/eye irritation
(Dimethylformamide) (Rabbit): SEVERE (EHC 114, 1991)
(Hydrofluoric acid) Causes serious eye damage (Serious eye damage/eye irritation Category 1)
Respiratory or skin sensitization:
(Hydrofluoric acid) May cause an allergic skin reaction (Skin sensitization Category 1)
Mutagenicity
(Dimethylformamide) Category 2: CERI/NITE No.8, 2005

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(Hydrofluoric acid)	*Category 2: EU-RAR No.8, 2001*
Carcinogenicity	
(Tetrahydrofuran)	*ACGIH-A3(2002): Confirmed Animal Carcinogen with Unknown Relevance to Humans*
(Dimethylformamide)	*IARC-Gr.3: Not classifiable as a human carcinogen* *ACGIH-A3(1990): Confirmed Animal Carcinogen with Unknown Relevance to Humans*
Reproductive toxicity	
(Dimethylformamide)	*Category 1B: CERI/NITE No.8, 2005*
Specific target organ toxicity	
Single exposure	
(Tetrahydrofuran)	*Causes damage to nervous system (CERI Hazard Databook, 1999)*
(Dimethylformamide)	*Causes damage to respiratory (CERI/NITE No.8, 2005)*
(Hydorfluoric acid)	*Causes damage to respiratory, pancreas (Specific target organ toxicity – Single exposure Category 1 (respiratory, pancreas))*
Repeatd exposure	
(Tetrahydrofuran)	*Causes damage to liver, kidney, nervous system (ACGIH, 2001)*
(Dimethylformamide)	*Causes damage to liver (CERI/NITE No.8, 2005)*
(Hydorfluoric acid)	*Causes damage to bone, teeth, hypophysis, thyroid gland, kidney, nerous system, liver, testis, bronchus through prolonged or repeated expore (Specific target organ toxicity – Repeated exposure Category 1 (bone, teeth, hypophysis, thyroid gland, kidney, nervous system, liver, testis, bronchus))*
Aspiration hazard	*No data available*
Other adverse effects	*No data available*

12. Ecological information

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Control parameters e.g. occupational exposure limit values or biological limit values

· ***Ecotoxicity***

· ***Water solubility:***

(Tetrahydrofuran)
miscible (ICSC, 1997)
(Hydrofluoric acid)
very good (ICSC, 2000)
No Persistence and degradability data available
Bioaccumulative potential
(Dimethyl formamaide)
log Pow=0.87 (ICSC, 2000)
No Mobility in soil data available
Ozone depleting chemical data not available

13. Disposal considerations

· ***Disposal methods:***

Avoid release to the environment (- if this is not the intended use).
Dispose of contents/container in accordance with local/national regulation.

14. Transport information

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· **Regulatory information:**
· UN No, UN CLASS : Not applicable in accordance with following special provisions
Special provisions 216 designated on UN NO. 3175 (SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S.)
Mixtures of solids which are not subject to these Regulations and flammable liquids may be transported under this entry without first applying the classification criteria of Division 4.1, provided there is no free liquid visible at the time the substance is loaded or at the time the packaging or cargo transport unit is closed. Each cargo transport unit shall be leakproof when used as a bulk packaging. Sealed packets and articles containing less than group II or III 10 ml of a packing flammable liquid absorbed into a solid material are not subject to these Regulations provided there is no free liquid in the packet or article.
· DOT Hazard Classification: Not Regulated.
· IATA Classification: Not Regulated.
· ICAO Classification: Not Regulated.
· IMO Classification: Not Regulated.
· TDG hazard Classification: Not Regulated.

15. Regulatory information

This product is considered to meet the definition of an "article". This Safety Data Sheet includes the information and is written based on the encapsulated substance or mixture in this article.
· GHS classification and labeling: Not applicable
Toxic Substance Control Act (TSCA) Inventory Status:
The components of the mixture fluid contained within this pen-type article are listed or have been registered for inclusion on the Section 8(B) Chemical Substance Inventory List (40 CFR 710).

16. Other information

This product is considered to meet the definition of an "article". This Safety Data Sheet includes the information and is written based on the encapsulated substance or mixture in this article.
· Reference Book
Globally Harmonized System of classification and labelling of chemicals, (4th ed., 2011), UN Recommendations on the TRANSPORT OF DANGEROUS GOODS 18th edit., 2013 UN Classification, labelling and packaging of substances and mixtures (table3-1 ECNO6182012) 2012 EMERGENCY RESPONSE GUIDEBOOK(US DOT) 2014 TLVs and BEIs. (ACGIH) http://monographs.iarc.fr/ENG/Classification/index.php Supplier's data/information

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