Safety Data Sheet

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name	Thermo Label LI-180,190,200,210,220,230,240 3E-180,190,200,210,220, 5E-170	Date Prepared Date Revised Rev. 1	April 19, 2013 July 27, 2015
Company Name	NiGK Corporation		
Company Address	21-2 Matoba-shinmachi, Kawagoe, Saitama, 350-1107 JAPAN		
Issued Department	ENVIRONMENT SAFETY ADMINISTRATION DEPT.		
Emergency Phone Number	+81-49-231-2103 Fax Number +81-49-232-1334		
E-mail Address	kankyo-hoan@nichigi.co.jp		
Recommended Use and Restrictions on Use	Temperature indicating material		

This product is a molded article that does not take any other form than solid and will not be powdered or granulated under normal handling conditions. Therefore, it is not legally obligated to attach a safety label or SDS to this product. The hazard and toxicity information given below is the reference information concerning the chemical substances used as temperature indicating material of this product.
Hazardous substance will not leak out from this product under normal handling conditions. Never modify the shape of this product. If you do so, hazardous substance may be released or exposed.

2. HAZARD IDENTIFICATION

GHS Classification

Health Hazards	Acute toxicity - oral	Not classified
	Acute toxicity - dermal	Not classified
	Acute toxicity - inhalation (vapor)	Category 3
	Acute toxicity - inhalation (dust or mist)	Category 4
	Skin corrosion / irritation	Not classified
	Serious eye damage / eye irritation	Category 2B
	Skin sensitization	Not classified
	Germ cell mutagenicity	Not classified
	Carcinogenicity	Not classified
	Reproductive toxicity	Category 1B
	Target organ / systemic toxicity (single exposure)	Category 3
	Target organ / systemic toxicity (repeated exposure)	Category 1 (liver) Category 2 (respiratory organs)
Environmental Hazards	Hazardous to the aquatic environment (acute)	Not classified
	Hazardous to the aquatic environment (chronic)	Not classified

Other hazards are not applicable for classification by the GHS, or classification is not possible for them.

GHS Label Elements

Pictograms / Symbols

Signal Word Danger

Hazard Statements
- Harmful if inhaled
- Causes eye irritation
- May damage fertility or the unborn child
- May cause respiratory irritation or drowsiness or dizziness
- Causes damage to organs through prolonged or repeated exposure

Precautionary Statements

Prevention
- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- Do not eat or drink when using this product.

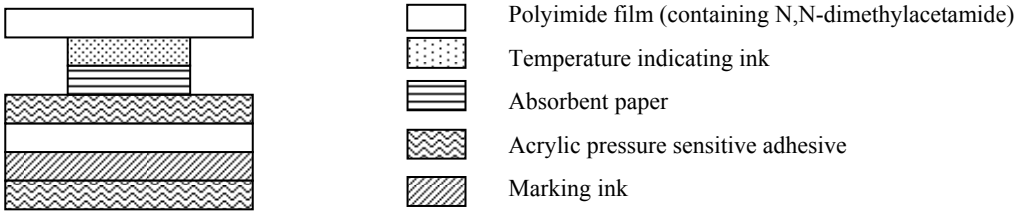
	• Wash hands thoroughly after handling. • Wear protective gloves/eye protection/face protection.
Response	• IF SWALLOWED: Immediately call a doctor. Do NOT induce vomiting. • IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. • If eye irritation persists, get medical advice/attention. • IF ON SKIN: Wash with plenty of water and soap. • If skin irritation occurs: Get medical advice/attention. • Take off contaminated clothing and wash it before reuse. • If exposed or concerned: Call medical advice/attention. • Call a doctor if you feel unwell. Get medical advice/attention.
Storage	• Store in a cool/well-ventilated/dark place (0 to 20℃). • Store locked up.
Disposal	• When disposing of the contents/container, consign them to a licensed industrial waste disposal operator with this sheet disclosed.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Single Product / Mixture Classification Mixture

Ingredients		Content (%)	Official reference number in Japan	CAS number
	Polyimide film (containing N,N-dimethylacetamide)	50 to 80 (<1)	— (2-723)	— (127-19-5)
	Temperature indicating ink	3 to 30	—	—
	Absorbent paper	5 to 20	—	—
	Acrylic pressure sensitive adhesive	5 to 20	—	—
	Marking ink	<3	—	—

Composition



Temperature indicating ink, absorbent paper, acrylic pressure sensitive adhesive, and marking ink are composed of known chemical substances which are not among the target substances to be notified under the Industrial Safety and Health Law nor among the target substances of the PRTR law. Their names are kept as trade secrets and will not be disclosed.

4. FIRST-AID MEASURES

Inhalation	Because this product is a label, inhalation hazard will not occur under normal handling conditions. If inhalation causes headaches, dizziness, or other discomfort, remove person to fresh air.
Skin Contact	No special measure is required. If skin irritation occurs, rinse the skin with cold or tepid water.
Eye Contact	Because this product is a label, it will not get into the eyes under normal handling conditions. If in eyes, rinse cautiously with clean water for at least 15 minutes and get treated by an ophthalmologist.
Ingestion	Because this product is a label, it will not be swallowed under normal handling conditions. If swallowed, rinse mouth cautiously with clean water. If possible, induce vomiting by sticking finger in throat and get medical attention.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Extinguishing powder (ABC), carbon dioxide, drying sand, or fire extinguishing foam
Unsuitable Extinguishing Media	Not available
Extinguishing Method	Cut off the fire source and use extinguishing media from the windward.

6. ACCIDENTAL RELEASE MEASURES

Because this product is a label, it will cause no leakage hazard.

7. HANDLING AND STORAGE

Handling Precautions	Technological countermeasures: None in particular	Precautions: None in particular
Storage Precautions	Technological countermeasures: None in particular Storage conditions: No particular hazards. To keep the quality, however, store this product in a cool and dark place away from heat and moisture.	

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

	N,N-dimethylacetamide
Standard Control Concentration	Not specified
Occupational Exposure Limit	
The Japan Society for Occupational Health	10ppm
ACGIH TLV-TWA	10ppm
STEL	Not specified
Equipment Countermeasures	None in particular under normal handling conditions
Protective Gear	None in particular under normal handling conditions

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Label
Odor	None
pH	Not available
Melting Point/Freezing Point	Not available
Boiling Point, Initial Boiling Point and Boiling Point Range	Not available
Flash Point	Not available
Explosion Limits	Not available
Vapor Pressure	Not available
Vapor Density	Not available
Specific Gravity	Not available
Solubility	Slightly soluble in water and organic solvent.
Octanol/Water Partition Coefficient	Not available
Auto-ignition Temperature	Not available
Decomposition Temperature	Not available
Viscosity	Not available

10. STABILITY AND REACTIVITY

Stability	Stable under normal handling conditions.
Possibility of Hazardous Reactions	Not available
Conditions to Avoid	Heat and moisture (to prevent the product from deterioration although there are no hazards.)
Incompatible Materials	Pyrophoric substances
Hazardous Decomposition Products	Not available

11. TOXICOLOGICAL INFORMATION

Ingredient	Acute toxicity (oral)	Acute toxicity (dermal)	Acute toxicity - inhalation		
			Gas	Vapor	Dust/Mist
N,N-dimethylacetamide	Not classified (5000mg/kg)	Not classified (2100mg/kg)	Not applicable	Category 3 (4.41mg/L)	Category 4 (2.5mg/L)

Skin Corrosion / Irritation

N,N-dimethylacetamide: Non-diluted solution of N,N-dimethylacetamide has been reported to cause no irritation in a skin irritation test on rabbits, an irritation in a skin irritation test on guinea pigs, and mild irritation in a skin irritation test on mice.

Serious Eye Damage / Eye Irritation

N,N-dimethylacetamide: It was reported that, in an eye irritation test on rabbits, dropping the non-diluted solution into the eye caused mild reversible irritation.

Respiratory Sensitization / Skin Sensitization

N,N-dimethylacetamide: Respiratory sensitization: Classification is not possible because no data is available.
Skin sensitization: It was reported that no skin sensitization was caused in a skin sensitization test on guinea pigs.

Germ Cell Mutagenicity

N,N-dimethylacetamide: N,N-dimethylacetamide has been reported to show negative results both in a germ cell in vivo mutagenicity test and a germ cell heritable mutagenicity test (dominant lethal tests on rats; one inhalation exposure and one dermal administration)).
It was also reported that no significant increase in chromosome aberration was seen in a somatic cell in vivo mutagenicity test (a chromosome aberration test using peripheral blood lymphocytes of humans).

Carcinogenicity

N,N-dimethylacetamide: Classified in Group A4 (not classifiable as a human carcinogen) by ACGIH.
The test result was reported to be negative in a 52-week forcible oral administration test on rats, a 24-month oral administration test on rats, a 2-year inhalation exposure test on rats, a 18-month inhalation exposure test on mice, and a 6-week dermal administration test on hamsters.

Reproductive Toxicity

N,N-dimethylacetamide: It was reported that, at a dosage that will cause toxicity effects (such as weight gain suppression and feed intake reduction) on dams, the reproductive toxicity test by forcible oral administration on rats (pregnant period: 7 to 21 days) showed the following effects: an increase in embryonic lethality, a decrease in average fetal weight, and an increase in fetal malformations. Most fetal malformations were seen in the head (otocephaly, atresia of external nasal cavity, brachygnathia, and cerebral ventricular enlargement) and in the cardiovascular system (pulmonary artery, aorta or heart defects, and ventricular septal defect).
It was also reported that an increase in significant genetic mutation (delayed ossification) in fetuses was seen in a reproductive toxicity test by inhalation exposure employing rabbits (pregnant period: 7 to 19 days) at a dosage that will not cause toxicity effects on dams.

Target Organ / Systemic Toxicity (Single Exposure)

N,N-dimethylacetamide: It was reported that a single-dose test to obtain a dermal lethal dose in rabbits showed degeneration of the heart, liver, and kidneys at a concentration below the lethal dose. However, the data has not been employed as classification data because the dose cannot be identified due to non-disclosed data and unknown details.
Dizziness, lethargy, and debilitation have been observed in humans.

Target Organ / Systemic Toxicity (Repeated Exposure)

N,N-dimethylacetamide: The following effects were reported in a 6-month inhalation exposure test on rats: pulmonary irritation, suppression of weight gain, significant dose-dependent irritation of nose and upper-respiratory tract, and liver damage (hepatocellular degeneration). It was also reported that a 2-year inhalation exposure test on rats showed the following effects within the value range specified for Category 2: an increase in liver weight, spongy degeneration of the liver, periosis hepatis, and lipofuscin/hemosiderin accumulation in Kupffer cells.
As for humans, the most common effect identified in workers who experienced 2 to 10-year dermal or inhalation exposure to this substance was the hepatic dysfunction, which was found in 19 out of 41 workers. It was also reported that many disorders were seen in their bronchi, upper-respiratory tracts, stomachs, and nervous systems. Therefore, the target organs are considered to be the liver and respiratory system.

12. ECOLOGICAL INFORMATION

Hazardous to the Aquatic Environment (Acute)

N,N-dimethylacetamide	48-hour EC50 for crustaceans (daphnia magna) >500mg/ℓ

Hazardous to the Aquatic Environment (Chronic)

N,N-dimethylacetamide	Somewhat water soluble (aqueous solubility 1.00×106mg/ℓ). Its acute toxicity is low.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method	Dispose in accordance with the related laws and regulations.
Method of Consigning Waste Disposal	When disposing of the contents/container, consign them to a licensed industrial waste disposal operator with this sheet disclosed.

14. TRANSPORT INFORMATION

UN Number	Not applicable
Proper Shipping Name	Not applicable
UN Class	Not applicable
Packing Group	Not applicable
Marine Pollutant	Not applicable
Precautions for Loading	Handle the package with care to prevent it from being wet or broken.
Other Precautions	Follow general precautions as well as the other handling and storage precautions described in this document.

15. REGULATORY INFORMATION

Industrial Safety and Health Law	Dangerous or harmful substances subject to be notified their names, etc. (Law Article 57-2, Enforcement Order Article 18-2, Appended Table 9)	N,N-dimethylacetamide
Law Concerning Reporting, etc. of Release of Specific Chemical Substances to the Environment and Promotion of the Improvement of Their Management (PRTR Law)	Class II designated chemical substances (Law Article 2-2, Enforcement Order Article 2, Appended Table 2)	N,N-dimethylacetamide
Fire Service Act	Category IV inflammable liquids, Class II water-soluble petroleum liquids (Law Article 2-7 Hazardous Materials, Appended Table 1)	N,N-dimethylacetamide
The Law Relating to the Prevention of Marine Pollution and Maritime Disaster	Noxious liquid substances (Category Z substances) (Enforcement Order Appended Table 1)	N,N-dimethylacetamide

16. OTHER INFORMATION

Reference

1) GHS Classification Results Database (National Institute of Technology and Evaluation, Japan)
2) GHS Model MSDS Information (Japan Advanced Information Center of Safety and Health, Japan Industrial Safety & Health Association)
3) Guideline for Creating a Material Safety Data Sheet (Japan Chemical Industry Association)
4) ezCRIC (Japan Chemical Database Ltd.)

This document ("Safety Data Sheet") is not a safety warranty.
Before handling this product, the users must read this "Safety Data Sheet" as reference, and take measures appropriate for their specific situation on their own responsibility.
The information on this "Safety Data Sheet" may be updated any time based on revised laws and regulations and new findings.
Before use of this product, it is recommended to check on not only the hazard and toxicity information but also the latest rules, regulations, and laws of your organization, area, or country.

To the best of our knowledge the information contained herein is accurate. However, we assume no liability for the accuracy or completeness of the information contained herein. Final determination of the suitability of any product is the sole responsibility of the user. All products 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.