

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519

KATUN[®]

CN IR 4570 FUSER FILM

Version 1.0 Revision Date: 2017/02/13 Katun Part Number: 46827 Date of last issue: 2017/02/13
Date of first issue: 2017/02/13
SDSCN / PRD / 0331

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : CN IR 4570 FUSER FILM

Chemical nature : Dimethylformamide (DMF)

Manufacturer or supplier's details

Company : Katun Corporation

Address : 10951 Bush Lake Road, Minneapolis, MN 55438, United States

Telephone : +1 952-941-9505

Emergency telephone number : +1 952-941-9505

E-mail address : Visit our website at www.katun.com or email order@us.katun.com

Recommended use of the chemical and restrictions on use

Recommended use : Solvent

Restrictions on use : None known.

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	: liquid
Colour	: colourless
Odour	: characteristic

Flammable liquid and vapour. Harmful in contact with skin. Harmful if inhaled. Causes serious eye irritation. May damage the unborn child.

GHS Classification

Flammable liquids : Category 3

Acute toxicity (Inhalation) : Category 4

Acute toxicity (Dermal) : Category 4

Serious eye damage/eye irritation : Category 2A

Reproductive toxicity : Category 1B

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GHS label elements

Hazard pictograms



Signal word

: Danger

Hazard statements

: H226 Flammable liquid and vapour.
H312 Harmful in contact with skin.
H332 Harmful if inhaled.
H319 Causes serious eye irritation.
H360D May damage the unborn child.

Precautionary statements

: **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
Storage:
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
Disposal:

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P501 Dispose of contents/ container to an approved waste disposal plant.

Physical and chemical hazards

Flammable liquid and vapour.

Health hazards

Harmful if inhaled. Harmful in contact with skin. Causes serious eye irritation. May damage the unborn child.

Environmental hazards

Not classified based on available information.

Other hazards which do not result in classification

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components

Chemical name	CAS-No.	Concentration (% w/w)
N,N-dimethylformamide	68-12-2	> 99.9

4. FIRST AID MEASURES

- If inhaled : Remove to fresh air.
If not breathing, give artificial respiration.
If breathing is difficult, give oxygen.
Get immediate medical advice/ attention.
- In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes.
Get medical advice/ attention.
Take off contaminated clothing and shoes immediately.
Wash contaminated clothing before reuse.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/ attention.
- If swallowed : Clean mouth with water and drink afterwards plenty of water.
Do not induce vomiting without medical advice.
Call a physician or poison control centre immediately.
- Most important symptoms and effects, both acute and delayed : Causes eye irritation.
Headache
Nausea
Abdominal pain
Liver disorders
More severe effects if alcohol is consumed.
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Vomiting
Notes to physician : Treat symptomatically.

5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use water spray to extinguish.
Carbon dioxide (CO₂)
Dry chemical
Alcohol-resistant foam

Unsuitable extinguishing media : High volume water jet

Specific hazards during fire-fighting : Thermal decomposition can lead to release of irritating gases and vapours.
The product will float on water and can be reignited on surface water.

Hazardous combustion products : Nitrogen oxides (NO_x)
Carbon oxides

Specific extinguishing methods : Use a water spray to cool fully closed containers.
Do not allow run-off from fire fighting to enter drains or water courses.

Special protective equipment for firefighters : Wear self-contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Wear appropriate personal protective equipment.
Local authorities should be advised if significant spillages cannot be contained.

Environmental precautions : Avoid release to the environment.
Do not flush into surface water or sanitary sewer system.

Methods and materials for containment and cleaning up : Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).
After cleaning, flush away traces with water.
Eliminate all ignition sources if safe to do so.

Prevention of secondary hazards : Local authorities should be advised if significant spillages cannot be contained.

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7. HANDLING AND STORAGE

Handling

Advice on protection against fire and explosion : Keep product and empty container away from heat and sources of ignition.

Advice on safe handling : Do not breathe vapours or spray mist.
Do not get on skin or clothing.
Do not get in eyes.
Avoid contact with skin, eyes and clothing.
Do not swallow.
Use only with adequate ventilation.
Wash thoroughly after handling.
Keep away from fire (No Smoking).
Keep away from fire, sparks and heated surfaces.
Do not use sparking tools.

Avoidance of contact : Strong oxidizing agents
Strong acids
Halogenated compounds

Storage

Conditions for safe storage : Keep containers tightly closed in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
N,N-dimethylformamide	68-12-2	PC-TWA	20 mg/m ³	GBZ 2.1-2007
Further information: Skin				
		TWA	10 ppm	ACGIH

Engineering measures : Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal protective equipment

Respiratory protection : Wear a positive-pressure supplied-air respirator.
Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates

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that exposures are within recommended exposure guidelines.

Eye/face protection : Safety glasses with side-shields
Goggles
Face-shield

Skin and body protection : Complete suit protecting against chemicals

Hand protection

Remarks : Rubber gloves Neoprene gloves The data about break through time/strength of material are standard values! The exact break through time/strength of material has to be obtained from the producer of the protective glove.

Protective measures : Remove respiratory and skin/eye protection only after vapours have been cleared from the area.
Ensure that eye flushing systems and safety showers are located close to the working place.
Use personal protective equipment as required.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : colourless

Odour : characteristic

pH : 6.5 - 8.5, Concentration: 200 g/l

Melting point/range : -61 °C

Boiling point/boiling range : 152 - 153 °C

Flash point : 57.5 °C
Method: closed cup

Upper explosion limit : 16 %(V)

Lower explosion limit : 2.2 %(V)

Vapour pressure : 3.77 hPa (20 °C)
4.8 hPa (25 °C)

Relative vapour density : 2.52
(Air = 1.0)

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Density : 0.949 g/cm³ (20 °C)

Solubility(ies)
Water solubility : 200 g/l (20 °C)

Partition coefficient: n-
octanol/water : log Pow: -0.85

Auto-ignition temperature : 445 °C

Viscosity
Viscosity, dynamic : 0.802 mPa.s (25 °C)

Explosive properties : Not classified

Oxidizing properties : Not classified

Molecular weight : 73.09 g/mol

10. STABILITY AND REACTIVITY

Reactivity : Stable under recommended storage conditions.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reac-
tions : Heating can release hazardous gases.
Hazardous polymerisation does not occur.

Conditions to avoid : Keep away from sources of ignition - No smoking.
Take precautionary measures against static discharges.
Heat, flames and sparks.

Incompatible materials : Strong oxidizing agents
Strong acids
Halogenated compounds

Hazardous decomposition
products : Nitrogen oxides (NO_x)
Carbon dioxide (CO₂)
Carbon monoxide
Ammonia

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity : LD50 Oral (Rat): 3,010 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 5.85 mg/l
Exposure time: 4 h

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Test atmosphere: vapour

Acute dermal toxicity : LD50 Dermal (Rabbit): > 3,160 mg/kg

Skin corrosion/irritation

Product:

Species: Rabbit

Result: No skin irritation

Serious eye damage/eye irritation

Product:

Species: Rabbit

Result: Eye irritation

Remarks: Causes serious eye irritation.

Respiratory or skin sensitisation

Product:

Result: Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity

Product:

Germ cell mutagenicity - Assessment : Did not show mutagenic effects in animal experiments.

Carcinogenicity

Product:

Remarks: No significant adverse effects were reported

Reproductive toxicity

Product:

Effects on fertility :

Remarks: May damage the unborn child.

Repeated dose toxicity

Product:

Species: Rat

NOAEL: 238 mg/kg

Application Route: Oral

Exposure time: 28 days

Target Organs: Liver, Eyes, Kidney, Respiratory system, Skin, Cardiovascular

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Mobility in soil

Product:

Distribution among environmental compartments : Koc: 2.4, log Koc: 0.38

Other adverse effects

Product:

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : In accordance with local and national regulations. Waste must be classified and labelled prior to recycling or disposal.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No. : UN 2265
Proper shipping name : N,N-Dimethylformamide
Class : 3
Packing group : III
Labels : Flammable Liquids
Packing instruction (cargo aircraft) : 366
Packing instruction (passenger aircraft) : 355

IMDG-Code

UN number : UN 2265
Proper shipping name : N,N-DIMETHYLFORMAMIDE

Class : 3
Packing group : III
Labels : 3
EmS Code : F-E, S-D
Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

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Not applicable for product as supplied.

15. REGULATORY INFORMATION

National regulatory information

Law on the Prevention and Control of Occupational Diseases

The components of this product are reported in the following inventories:

CH INV : On the inventory, or in compliance with the inventory
DSL : On the inventory, or in compliance with the inventory
AICS : On the inventory, or in compliance with the inventory
NZIoC : On the inventory, or in compliance with the inventory
ENCS : On the inventory, or in compliance with the inventory
KECI : On the inventory, or in compliance with the inventory
PICCS : On the inventory, or in compliance with the inventory
IECSC : On the inventory, or in compliance with the inventory
TCSI : On the inventory, or in compliance with the inventory
TSCA : On the inventory, or in compliance with the inventory

16. OTHER INFORMATION

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; CPR - Controlled Products Regulations; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Tox-

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icology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Date format : yyyy/mm/dd

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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