



11 June, 2015  
SDS22024 en-6

# SAFETY DATA SHEET

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## 1. PRODUCT AND COMPANY IDENTIFICATION

### PRODUCT NAME

IMMERSION OIL TYPE NF

### COMPANY IDENTIFICATION

NIKON CORPORATION

Quality Assurance Section,

Microscope Solutions Business Unit

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### FOR EMERGENCIES

(JAPAN)+81-45-853-8608

### RECOMMENDED USE

Immersion oil to use for microscope objective lenses.

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## 2. HAZARDS IDENTIFICATION

### GHS CLASSIFICATION

#### PHYSICAL HAZARDS

All items Not classified

#### HEALTH HAZARDS

Acute toxicity (Oral) Not classified

Acute toxicity (Dermal) Not classified

Acute toxicity, inhalation (Gas) Not classified

Acute toxicity, inhalation (Dust and mist) Category 4

Skin corrosion/irritation Not classified

Serious eye damage/eye irritation/ CLP Category 2

Serious eye damage/eye irritation/ OSHA HCS Category 2B

Respiratory or skin sensitization Not classified

Germ cell mutagenicity Category 2

Carcinogenicity Not classified

Reproductive toxicity Not classified

Specific target organ toxicity - Single exposure Category 2

Specific target organ toxicity - Repeated exposure Category 1

Aspiration hazard Category 1

#### ENVIRONMENTAL HAZARDS

Hazardous to the aquatic environment - Acute toxicity Category 2

Hazardous to the aquatic environment - Chronic toxicity Category 2

The hazards item without a mention is the not classified or cannot classify it.

GHS LABEL ELEMENTS

Hazard Pictograms



Signal word

Danger

HAZARD STATEMENT(S)

- H303 May be harmful if swallowed
- H304 May be fatal if swallowed and enters airways
- H316 Causes mild skin irritation
- H320 Causes eye irritation
- H332 Harmful if inhaled
- H341 Suspected of causing genetic defects
- H371 May cause damage to organs
- H372 Causes damage to organs through prolonged or repeated exposure
- H401 Toxic to aquatic life
- H411 Toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT(S)

PREVENTION:

- P235+P410 Keep cool. Protect from sunlight.
- P261 Avoid berthing dust/fume/mist/vapors/spray.
- P271 Use in a well-ventilated area.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P264 Wash hands after handling.

RESPONSE: See section 4 of GENERAL ADVICE.

STORAGE

- P240 Ground/Bond container and receiving equipment.
- P235+P410 Keep cool. Protect from sunlight.
- P404 Store in a closed container.
- P405 Store locked up.

DISPOSAL

- P501 Dispose of contents/ in according with local / regional / national / international regulation
- P273 Avoid release to the environment.

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3. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE OR MIXTURE

Mixture

GENERAL PRODUCT DESCRIPTION

Immersion oil

Chemical identity	composition (%)	FORMULA	TSCA inventory	RTECS #	CAS#	UN#	ICSC#
Diphenyl ether	55~65%	C <sub>12</sub> H <sub>10</sub> O	Listed	KN8970000	101-84-8	3077	0791
Polybutene	25~35%	(C <sub>4</sub> H <sub>8</sub> ) <sub>x</sub>	Listed	Not listed	9003-27-4	Not listed	Not listed
Paraffin oils	5~15%	C <sub>m</sub> H <sub>n</sub>	Listed	PY8047000	8012-95-1 (8042-47-5)	Not listed	1597

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4. GENERAL ADVICE

INHALATION

- P304+P340 Remove person to fresh air and keep comfortable for breath.
- P312 Call a POISON CENTER or doctor/physician if you feel unwell..

SKIN CONTACT

- P332+P313 If skin irritation occurs: Get medical advice/attention.

EYE CONTACT

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: Get medical advice/attention.
Flush eyes with plenty of water for at least 15 minutes, occasionally
lifting the upper and lower eyelids.
Get medical aid.

INGESTION

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P331 Do NOT induce vomiting.

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5. FIRE - FIGHTING MEASURES

SPECIFIC METHODS

Fire-extinguishing work is done from the windward and the suitable fire-extinguishing
method according to the surrounding situation is used.
For initial fire, use dry powder, carbon dioxide, etc.
For large fire, it is effective to use fire foam, etc. to shut off air supply.
Discharging cylinder shape water from fire hose may lead to spread fire to the surroundings.
Cool surrounding facilities, etc. with water spray.
Remove movable containers if safe to do so.
Take action from upwind.
Wear air respirators, chemical protective clothing during firefighting.

SUITABLE EXTINGUISHING MEDIA

Dry chemical, foam, water spray, carbon dioxide

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6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Keep people away from and upwind of spill/leak.
Entry to non-involved personnel should be controlled around the leakage area by roping off,
etc.
Use personal protective equipment.
Avoid contact with skin and eyes.
No flares, smoking or flame in area.

ENVIRONMENTAL PRECAUTIONS

Do not release to the environment.
Be careful not to let it flow into rivers, etc., since adverse effects on the environment are
concerned

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

For small spills, absorb with dry earth, sawdust, sand, etc. and collect into a closed container then dispose
of them.
For large spills, dike with earth and sand, etc. to prevent further spills and cover liquid surface with foam
and collect into an empty container as much as possible

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7. HANDLING AND STORAGE

HANDLING

TECHNICAL MEASURES

Wear suitable protective equipment.
Keep container tightly closed.

VENTILATION

Use a local exhaust if dust or aerosol will be generated.

OTHER

Keep away from sources of ignition such as open flame, static discharge, electric
sparks, etc.
Wash hands and face thoroughly after handling.
Keep away from oxidizing agents.

STORAGE

TECHNICAL MEASURES

Ground all storage containers and use non-sparking tools, equipment.

HAZARDOUS DECOMPOSITION PRODUCTS

Keep away from contact with oxidizing materials

Store in a cool, dry, well-ventilated area away from incompatible substances  
 Keep container tightly closed

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CONTROL PARAMETERS

Not set up

EXPOSURE LIMITS

ACGIH (2010)

TLV-TWA 1ppm (Diphenyl ether: vapor)

TLV-STEL 2ppm (Diphenyl ether: vapor)

OSHA PEL (TWA): 1 ppm (Diphenyl ether: vapor)

NIOSH (TWA): 1 ppm (Diphenyl ether)

VENTILATION

Handle the product only under conditions where sufficient ventilation is provided and/or in a closed system.

Install eye washer and safety shower near handling and storage area and display where they are.

INDIVIDUAL PROTECTION MEASURES,

RESPIRATORY PROTECTION

Use a NIOSH/MSHA or European Standard EN149 approved respirator if the vapor concentrations exceed regulatory guidelines.

HAND PROTECTION

Wear appropriate protective gloves to prevent skin exposure.

EYE PROTECTION

Wear appropriate protective eyeglasses or chemical safety goggles.

SKIN PROTECTION

Wear appropriate protective clothing to minimize contact with skin.

Protective clothing

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9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Viscous colorless liquid

ODOR

Aromatic odor

pH

No data available

CHEMICAL PROPERTIES

Chemical properties	Diphenyl ether	Polybutene	Paraffin oils
melting point	28 °C	<-0°C	>-10 °C
boiling point	259°C	—	>300 °C
Solubility(water)	0.0018% 25°C	insoluble	insoluble
vapor pressure	0.0202mmHg 25 °C	—	<0.00001 Pa (20 °C)
density	1.075 20°C	0.898(15°C)	0.8-0.9
Vapor Density:	5.9	>1	—
Flash point	115 °C closed cup	228°C open cup	193 °C closed cup
Auto ignition Temperature:	618 °C	—	500-700 ° F
Explosive limits	0.8-1.5 vol%	—	10-20 vol%

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10. STABILITY AND REACTIVITY

STABILITY

Stable under normal temperatures and pressures

CONDITIONS TO AVOID

Sunlight, heat, open flames, high temperature sparks, static electrical charge, and other ignition sources

INCOMPATIBLE MATERIALS

Strong oxidizing agents Oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS

Carbon monoxide, Carbon dioxide

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11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY (oral/dermal/inhalation)

Oral, Category 5

Statistical calculations of the rat oral administration data of (ACGIH (2001), PATTY (5th, 2001), RTECS (2004)) show LD50 value: 2786mg/kg and it is set as Category 5, (Diphenyl ether).

Based on rat LD50 >5000mg/kg (IUCLID (2000)), it was set as the outside of Category, (Paraffin oils).

Dermal, Not classified

It was set as the outside of Category from rabbit LD50 value >7940mg/kg (RETCS (2004)), (Diphenyl ether).

Based on rat LD50 >5000mg/kg (IUCLID (2000)), it was set as the outside of Category, (Paraffin oils).

Inhalation (dust, mist), Category 4

Category 4 because of "SPECIES: Rat; ENDPOINT: LC50 = 2.18 mg/L." (IUCLID, 2000), (Paraffin oils).

SKIN CORROSION/IRRITATION

Category 3

It was classified as Category 3 according to the result of MILD (RTECS (2004)), (Diphenyl ether).

EYE DAMAGE/EYE IRRITATION

Category 2B

Since there was information of mild irritation in the data of HSDB (2005), it was set as Category 2B, (Diphenyl ether).

CARCINOGENICITY

Not classified

GERM CELL MUTAGENICITY

Category 2

Based on the increase in the abnormal cells in the cytogenetic study [chromosomal aberration test] (somatic cell in vivo mutagenicity test) using the rat (IUCLID (2000)), and based on the fact that increase was observed in frequency of the chromosomal aberration in the peripheral blood lymphocyte of the human who received occupational exposure (IARC suppl.7 (1987)), and on the fact that there being no information about the productive cell in vivo genotoxicity study. So we classified it as Category 2, (Paraffin oils).

SPECIFIC TARGET ORGANS/SYSTEMIC TOXICITY FOLLOWING SINGLE EXPOSURE

Category 2

There is the statement that there is the grossly, histopathological acute changes (Details unknown) in dependance to dose (1.51 - 5.05mg/L) in the rat test of inhalation exposure (IUCLID (2000)), it is classified into Category 2 (lung), (Paraffin oils).

SPECIFIC TARGET ORGANS/SYSTEMIC TOXICITY FOLLOWING REPEATED XPOSURE

Category 1

It was classified to as Category 1 (lungs, skin) since that pulmonary fibrosis, lipid pneumonias and lipogranuloma of lungs are reported in humans who received exposure of the mineral oils or the mist over many years (ACGIH (2001) and IARC 33 (1984), EHC 20 (1982)), and generation of the serious folliculitis is reported in the epidemiological study by occupational exposure to cutting oil (IARC 33 (1984)), (Paraffin oils).

ASPIRATION HAZARD

Category 1

It was classified into Category 1 based on the reports that ingestion of mineral oil causes the aspiration into the lungs, and as a result it occures the pneumonie huileuses or chemical pneumonia in the human (EHC 20 (1982), IARC 33 (1984), ICSC (2001), ACGIH (2001)), (Paraffin oils).

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12. ECOLOGICAL INFORMATION

HAZARDOUS TO THE AQUATIC ENVIRONMENT (ACUTE)

Category 2

It was classified into Category 2 from 48-hour LC50=1.7mg/L of Crustacean (Daphnia magna) (IUCLID, 2000), (Diphenyl ether).

HAZARDOUS TO THE AQUATIC ENVIRONMENT (CHRONIC)

Category 2

Classified into Category 2, since acute toxicity was Category 2, not rapidly degrading (BOD: 6.3% (existing chemical safety inspections data)), and bioaccumulative (BCF=594 (existing chemical safety inspections data)), (Diphenyl ether).

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13. DISPOSAL CONSIDERATIONS

WASTE TREATMENT METHODS

Dispose of the remaining product and container in accordance with relevant laws and local regulation.

Wastes should be dealt by a licensed industrial waste trader and fully notify them of the information on hazardous properties and precautions regarding safe handling.

Avoid discharging waste water or cleaning water containing this product directly into rivers, etc.

CONTAMINATED PACKAGING

Used container should be cleaned before disposal or recycled in a suitable manner which shall follow the relevant laws and local regulations.

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14. TRANSPORT INFORMATION

UN HAZARD CLASS

UN-No: 3077(Diphenyl ether)  
Transport Hazards Class: 9: Miscellaneous dangerous goods. (Diphenyl ether)  
Proper shipping name: Environmentally hazardous substance, solid, N.O.S.  
Packing group: III (Diphenyl ether)  
Marine pollutant Y (Polybutene, Diphenyl ether)

SPECIAL PRECAUTIONS FOR USER

Confirm no damages, corrosion and leakages of containers before transportation. Secure prevention of cargo collapse.

During transportation, avoid exposure to direct sunlight.

If a disaster occurs by accident, etc. during transportation, notify fire station and other relevant agencies of it at first.

INTERNATIONAL TRANSPORT CLASSIFICATION

IATA: Not dangerous goods  
IMDG: Not dangerous goods  
DOT (US): Not dangerous goods

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15. REGULATORY INFORMATION

DIPHENYL ETHER

UN Hazard Class  
UN No.3077 / CLASS 9  
UN Hazard Class: 9  
UN Packing Group: III  
EINECS No.202-981-2  
Regulation (EC) No 1907/2006:  
Authorisation and Restriction Not regulated  
TSCA listed  
OECD listed (HPV Chemicals)  
ICCA listed (HPV Chemicals)  
ICSC No.791  
GHS No.792  
Transport Emergency Card TEC(R)-90G02  
NFPA Code : H1 ; F1 ; R0  
RTECS Number: KN8970000 NOISH  
BRN Number 1364620  
MLD Number MFCD00003034

POLYBUTENE

OECD listed (Polybutene, Paraffin oils, Diphenyl ether)  
TSCA listed  
EINECS No.232-455-8  
Regulation (EC) No 1907/2006:  
Authorisation and Restriction Not regulated

ICSC No.1597  
PARAFFIN OILS  
EINECS No.232-384-2  
Regulation (EC) No 1907/2006:  
    Authorisation and Restriction   Not regulated  
TSCA listed  
GHS No.719  
EHC No.187  
OECD listed  
MLD Number MFCD00131611

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16. OTHER INFORMATION

Update history

Date of issue	1 April, 1999
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