

# Material Safety Data Sheet

PRODUCT NAME  
Preprint Fixative F-3

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## SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Identity (Trade Name As Used On Label);Preprint Fixative F-3

Recommended use of the chemical and restrictions on use; Preprint Fixative

Manufacturer/Supplier/Distributor Information;

Name; NABAKEM CORPORATION

Address; /81, Bongjae-gil63Beon-gil, Dunpo-myeon, Asan-si, Chungcheongnam-do, 31411 Korea


Emergency phone number;TEL :82 41 531 7992~6 FAX : 82 41 534 7991

## SECTION 2. HAZARDS IDENTIFICATION

### Hazard · Risk Classification

Hazard Class	Hazardcategory
Flammableaerosols	1
Flammable gases	1
Gasesunderpressure	Liquefied gas
Flammable liquids	2
Skincorrosion/irritation	2
Eyedamage/irritation	2
Carcinogenicity	2
Toxic to reproduction	2
Specific target organ toxicity(Single exposure)	3(Respiratory tractirritation,Narcoticeffects)
Specific target organ toxicity(Repeatedexposure)	1
Aspiration hazard	1

### GHS label elements, including precautionary statements

Category	Indication
Symbol	
Signal word	Danger
Hazard · Risk Statement	H222 Extremely flammable aerosol. H229 Pressurized container: may burst if heated. H220 Extremely flammable gas. H280 Contains gas under pressure; may explode if heated.

		<p>H225 Highly flammable liquid and vapour.  H315 Causes skin irritation.  H319 Causes serious eye irritation.  H351 Suspected of causing cancer.  H361 Suspected of damaging the fetus or fertility  H335 May cause respiratory irritation.  H336 May cause drowsiness or dizziness.  H372 Causes damage to organs &lt;...&gt; through prolonged or repeated exposure.  H304 May be fatal if swallowed and enters airways.</p>
<b>Precautionary statements</b>	<b>Prevention</b>	<p>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.  P211 Do not spray on an open flame or other ignition source.  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.  P251 Do not pierce or burn, even after use.  P260 Do not breathe dust/fume/gas/mist/vapours/spray.  P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  P264 Wash ... thoroughly after handling.  P270 Do not eat, drink or smoke when using this product.  P271 Use only outdoors or in a well-ventilated area.  P280 Wear protective gloves/protective clothing/eye protection/face protection.</p>
	<b>Response</b>	<p>P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor/...  P302+P352 IF ON SKIN: Wash with plenty water/...  P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  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.  P312 Call a POISON CENTER/doctor/.../if you feel unwell.  P314 Get medical advice/attention if you feel unwell.  P321 Specific treatment (see ... on this label)  P331 Do NOT induce vomiting.  P332+P313 If skin irritation occurs: 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 ... to extinguish.  P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  P381 Eliminate all ignition sources if safe to do so.</p>

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<b>Storage</b>	P403+P233Store in a well-ventilated place.Keep container tightly closed. P403+P235Store in a well-ventilatedplace. Keep cool. P405Store locked up. P410+P403Protect from sunlight. Store in a well-ventilatedplace. P410+P412Protect from sunlight. Do not exposeto temperatures exceeding50 °C/122 °F.
<b>Disposal</b>	P501Dispose of contents/container to... in accordance withlocal/regional/national/internationalregulations (to be specified).

Other hazards which do not result in classification: No information found

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### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

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CHEMICAL NAME	OTHERNAME	CAS NUMBER	Content (%)
Coconut oil polymer with benzoic acid, glycerol and phthalic anhydride	-	68038-05-1	1~10
Styrene, ethyl acrylate, 2-hydroxyethyl methacrylate, fumaric acid copolymer	-	97366-61-5	1~2
Toluene	-	108-88-3	5~15
Xylene	-	1330-20-7	5~15
Methylcyclohexane	-	108-87-2	0.1~1
Methyl isobutyl ketone	-	108-10-1	5~15
2-Butoxyethanol	-	111-76-2	1~3
Dimethyl ether	-	115-10-6	40~50

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### SECTION 4. FIRST AID MEASURES

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**Eye contact;**Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

**Skin contact;**Immediately flush skin with plenty of water. Get medical attention if irritation develops and persists. For minor skin contact, avoid spreading material on unaffected skin. Wash clothing separately before reuse. Take off immediately all contaminated clothing.

**Inhalation;**Move to fresh air. Oxygen or artificial respiration if needed. Call a physician if symptoms develop or persist.

**Ingestion;**Immediately call a POISON CENTER or doctor/physician. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting without advice from poison control center. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory

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medical device. Rinse mouth thoroughly. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

**Indication of immediate medical attention and notes for physician;** Consult a physician. Show this safety data sheet to the doctor in attendance.

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## SECTION 5. FIRE-FIGHTING MEASURES

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**Suitable (and unsuitable) extinguishing media;** Use water spray to keep fire exposed containers cool. If substance does ignite, use CO<sub>2</sub>, dry chemical or foam.

**Specific hazards arising from the chemical (e.g. nature of any hazardous combustion products);** No information found

**Special protective equipment and precautions for fire fighters;** In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face-piece operated in the pressure demand or other positive pressure mode. Combustion by-products include phosgene and hydrogen chloride gases. Structural firefighters' clothing provides only limited protection to the combustion products of this material.

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

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**Personal precautions, protective equipment and emergency procedures;** Ensure adequate ventilation. Keep unnecessary personnel away. Keep out of low areas. Keep people away from and upwind of spill/leak. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Wear appropriate protective equipment and clothing during clean-up.

**Environmental precautions and protective procedures;** Do not contaminate water.

**Methods and materials for containment and cleaning up;**

– **Large Spills:** Dike far ahead of spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Use only non-sparking tools.

– **Small Spills:** Wipe up with absorbent material (e.g. cloth, fleece).

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## SECTION 7. HANDLING AND STORAGE

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**Precautions for safe handling;** Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate.

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Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

**Conditions for safe storage (including any incompatibilities);** Store in accordance with local regulations. Store in a segregated and approved area. Store in original container, protected from direct sunlight. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

## SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### **Control parameters (e.g. occupational exposure limit values, biological limit values);**

Toluene; TWA : 50 ppm STEL : 150 ppm

Xylene; TWA : 100 ppm STEL : 150 ppm

Dimethyl ether; 1900 mg/m<sup>3</sup> (1000 ml/m<sup>3</sup>) DFG MAK 1000 ppm AIHA (TWA)

**Engineering controls;** Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

### **Personal protective equipment;**

– **Eye / face protection;** Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. Recommended: splash goggles.

– **Skin protection;** 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.

Recommended: lab coat.

– **Respiratory protection;** Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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## SECTION 9. PHYSICAL / CHEMICAL CHARACTERISTICS

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**Appearance;**Clear

**Odor;**Aromatic solvent odor

**Odour threshold;** No information found

**Ph;**No information found

**Melting point/freezing point;**No information found

**Initial boiling point and boiling range;**Bulk;>80°C

**Flash point;**-41°C(Dimethyl ether) / Bulk;>11°C

**Evaporation rate;**No information found

**Flammability (solid, gas);**No information found

**Upper/lower flammability or explosive limits;**No information found

**Vapour pressure;**No information found

**Vapour density;**No information found

**Specific Gravity (H<sub>2</sub>O = 1);**0.87 ± 0.05

**Relative density;**No information found

**Solubility(ies);**Insoluble

**Partition coefficient;**n-octanol/water;Toluene; 2.73, Xylene; 3.1

**Auto-ignition temperature;**No information found

**Decomposition temperature;**No information found

**Viscosity;**No information found

**Molecular Weight;** No information found

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## SECTION 10. STABILITY AND REACTIVITY

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**Chemical stability and possibility of hazardous reactions;**Stable under ordinary conditions of use and storage

**Conditions to avoid (e.g. static discharge, shock or vibration, etc);**Heat, flames and sparks. Incompatible materials.

**Incompatibility (Materials to Avoid);**Strong oxidizing agents.

**Hazardous Decomposition Products;**carbon oxide

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## SECTION 11. TOXICOLOGICAL INFORMATION

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– Toluene –

**Information on the likely routes of exposure;** No information found

**Acute toxicity**

– **Oral;** LD50 5580 mg / kg Species: Rat (EU Method B.1)

– **Dermal;** LD50> 5000 mg / kg Species: Rabbit

– **Inhalation;** Vapour LC50> 20 mg / l Species: Rat (OECD TG 403)

**Skin corrosion/irritation;**May be harmful if absorbed through skin. Causes skin irritation.

**Serious eye damage/irritation;**May cause eye irritation.

**Respiratory or skin sensitization;**No information found

**Germ cell mutagenicity;**No information found

**Carcinogenicity;**IARC; Group 3, ACGIH; A4

**Reproductive toxicity;**No evidence of reproductive effects. There is some evidence of developmental toxicity (lower body weight at birth and delayed vaginal opening) at toluene exposure concentrations  $\geq 1000$  ppm, concentrations which are associated with slight maternal toxicity.

**Specific target organ toxicity (single exposure);**Irritation to the respiratory tract. At levels above 200 ppm, headache, dizziness, nausea, loss of coordination and/or consciousness. Central nervous system depression may result at levels approaching 10,000ppm. Warning Hazard category 3.

**Specific target organ toxicity (repeated exposure);**After repeated dose exposure by inhalation, toluene causes a number of adverse effects including neuropsychological effects, auditory dysfunction and effects on colour vision.

**Aspiration hazard;** kinematic viscosity below 20.5 mm<sup>2</sup>/s.

– Xylene –

**Information on the likely routes of exposure;** No information found

**Acute toxicity**

– **Oral;** LD50 3523 mg / kg Species: Rat (EU Method B1)

– **Dermal;** LD50 1100 mg/kg

– **Inhalation;** Vapour LC50 5922 ppm 4 hr Species: Rat (25.713 mg / L EPA OPP 81-3, GLP)

**Skin corrosion/irritation;**Using a rabbit skin irritation test results and causes irritation of the middle.

**Serious eye damage/irritation;**Using a rabbit eye irritation test results and causes irritation of the middle.

**Respiratory or skin sensitization;**No information found

**Germ cell mutagenicity;**No information found

**Carcinogenicity;**: IARC; Group 3, ACGIH; A4

**Reproductive toxicity;**No information found

**Specific target organ toxicity (single exposure);**The substance or mixture is not classified as specific target organ toxicant, single exposure.

**Specific target organ toxicity (repeated exposure);**The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

**Aspiration hazard;** No aspiration toxicity classification

– Dimethyl ether–

**Information on the likely routes of exposure;** No information found

**Acute toxicity**

– Oral; No information found

– Dermal; No information found

– Inhalation; LC50 308.5 mg/l 4 hr Rat

**Skin corrosion/irritation;**No information found

**Serious eye damage/irritation;**No information found

**Respiratory or skin sensitization;**No information found

**Germ cell mutagenicity;**No information found

**Carcinogenicity;**No information found

**Reproductive toxicity;**No information found

**Specific target organ toxicity (single exposure);**No information found

**Specific target organ toxicity (repeated exposure);**No information found

**Aspiration hazard;** No information found

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## SECTION 12. ECOLOGICAL INFORMATION

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**Aquatic and terrestrial ecotoxicity;** No information found

**Persistence and degradability;** No information found

**Bioaccumulative potential;** No information found

**Mobility in soil;** No information found

**Other adverse effects;** No information found

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## SECTION 13. DISPOSAL CONSIDERATION

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Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

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## SECTION 14. TRANSPORT INFORMATION

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**Proper Shipping Name;**Aerosols

**Class No** 2.1

**UN-NUMBER;**1950

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## SECTION 15. REGULATORY INFORMATION

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Follow all regulation in your country

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## SECTION 16. OTHER INFORMATION

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**Issuing date;** 2005.08.08

**Revision number and date;**2021.06.22

**Others;**This information has been faithfully prepared on the basis of various knowledge and information and is not to guarantee the quality of this product. Also, this information can be changed without prior notice in accordance with introduction of new knowledge and test results, etc. For inquiries, please contact us or the place of product purchase.