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| | | 2nd Floor, Suntek Centre, 37/40, Subhash Road, Vile Parle (East), Mumbai-400057. India. |

| PRODUCT SPECIFICATION | |
|--|---|
| Title: 4 - FLUORO ACETOPHENONE (C ₈ H ₇ FO) | Document No. : NFIL/QC /SPEC/FP/014/00 Effective Date : 05/11/2008 |

Material Code : SPE005005

Major Packing : UN-Certified /MS-HDPE drum 200 / 250Kg

Storage Specifications : Stored in dry condition at room temperature in well closed container.



Molecular Formula : C₈H₇FO

Molecular Weight : 138.14

Synonyms : Acetophenone, 4-fluoro-; Ethanone, 1-(4-fluorophenyl)-;
p-Fluoroacetophenone; 1-(4-fluorophenyl)ethanone;
Ethanone, 1- (4-fluorophenyl)-;

| Sr. No. | TEST | SPECIFICATION |
|-------------------------------|--------------------------|------------------------------------|
| Product Specification: | | |
| 1 | Appearance / Description | Clear, colourless to yellow liquid |
| 2 | Moisture (By KF) | 00.50% Max. |
| 3 | Purity (By GC) | 99.00% Min. |
| 4 | Total impurity | 01.00% Max. |

- Customer should discuss with business unit at speciality@nfil.in for the other requirements than specified.
- Analytical Method No. **NFIL/QC/WI/FP/014**



NAVIN FLUORINE
INTERNATIONAL LIMITED

MATERIAL SAFETY DATA SHEET (MSDS)

4'-Fluoroacetophenone

1. CHEMICAL IDENTITY

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|------------------|----------------------------------|
| Chemical name | 4'-Fluoroacetophenone |
| Synonym | 1-(4-Fluorophenyl)ethanone. |
| Chemical Formula | C ₈ H ₇ FO |

2. COMPOSITION / INFORMATION ON INGREDIENTS

| | | |
|------------------|-----------------------|--------------------|
| Ingredients Name | 4'-Fluoroacetophenone | CAS No.: 403-42-9 |
| | | EC No. : 206-960-9 |

3. PHYSICAL / CHEMICAL DATA

| | | | |
|------------------|-------------------|---------------------|--------------------------|
| Boiling Point | 196 °C @ 760 mmHg | Vapour Pressure | Not available |
| Melting Point | 4 °C | Solubility in water | Not available |
| Vapour Density | Not available | Appearance | colorless - light yellow |
| Specific Gravity | 1.130 | Odour | None reported |
| pH | Not available | Other | - |
| Physical State | Clear liquid | | |

4. FIRE / EXPLOSION HAZARD DATA

| | | | |
|---|--|-------------|---------------|
| Flammability | Yes | Flash Point | 71 °C |
| Auto ignition temperature | Not available | LEL | Not available |
| Explosion sensitivity to impact | NA | UEL | Not available |
| Explosion sensitivity to static electricity | NA | | |
| Hazardous Combustion products | NA | | |
| Hazardous Polymerization | Has not been reported | | |
| Pyrophoric material | NA | Corrosive | NA |
| Organic Peroxide | NA | Oxidizer | NA |
| Explosive material | NA | Other | - |
| NFPA Rating (estimated) | Health: 2; Flammability: 2; Instability: 0 | | |

5. STABILITY & REACTIVITY DATA

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| Chemical Stability | Stable under normal temperatures and pressures. |
| Incompatibility | Strong oxidizing agents, strong reducing agents, strong bases. |
| Conditions to avoid | Incompatible materials, ignition sources, excess heat, direct sunlight |
| Hazardous reaction / decomposition products. | Carbon monoxide, carbon dioxide, hydrogen fluoride gas. |

6. HEALTH HAZARD DATA

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| Effects of exposure / symptoms | Eye: Causes eye irritation. Skin: Causes skin irritation. May be harmful if absorbed through the skin. Ingestion: Harmful if swallowed. May cause irritation of the digestive tract. Inhalation: Causes respiratory tract irritation. May be harmful if inhaled. Chronic: No information found: |
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7. TOXICOLOGICAL INFORMATION

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| LD 50 / LC 50 | Not available. | |
| Exposure Limit | None listed | |
| 8. ECOLOGICAL INFORMATION | | |
| No data available. No information available.. | | |
| 9. PREVENTIVE MEASURES / EXPOSURE CONTROL / PERSONAL PROTECTION | | |
| Engineering Control | Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low. | |
| Personal Protective Equipment | <p>Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.</p> <p>Skin: Wear appropriate protective gloves to prevent skin exposure.</p> <p>Clothing: Wear appropriate protective clothing to prevent skin exposure.</p> <p>Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.</p> | |
| 10. HANDLING & STORAGE | | |
| Normal handling | Use with adequate ventilation. Use spark-proof tools and explosion proof equipment. Do not get in eyes, on skin, or on clothing. Keep away from heat, sparks and flame. Do not ingest or inhale. | |
| Storage Recommendation | Keep away from sources of ignition. Store in a cool, dry place. Store in a tightly closed container | |
| 11. EMERGENCY / FIRST AID MEASURES | | |
| Fire | Fire Extinguishing Medium | Use water spray, dry chemical, carbon dioxide, or appropriate foam. |
| Exposure / First Aid Measure | Skin | Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. |
| | Eyes | Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid. |
| | Ingestion | Do not induce vomiting. Get medical aid immediately. Call a poison control center. |
| | Inhalation | Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Get medical aid. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. |
| Special Procedure | Treat symptomatically and supportively | |
| 12. ACCIDENTAL RELEASE MEASURE | | |
| Spills/Leaks | Absorb spill with inert material (e.g. vermiculite, sand or earth), then place | |

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| | in suitable container. Remove all sources of ignition. Use a spark-proof tool. Do not let this chemical enter the environment.. |
| 13. DISPOSAL CONSIDERATIONS | |
| Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification. | |
| 14. TRANSPORT INFORMATION | |
| Proper shipping Name | Not regulated |
| Hazard Class | |
| UN Number | |
| Packing Group | |
| Hazard Label | |
| 15. REGULATORY INFORMATION | |
| European/International Regulations European Labeling in Accordance with EC Directives Hazard Symbols: XN Risk Phrases: R 22 Harmful if swallowed. R 36/37/38 Irritating to eyes, respiratory system and skin. Safety Phrases: S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S 37/39 Wear suitable gloves and eye/face protection. | |
| 16. NAME OF FIRM - NAVIN FLUORINE INTERNATIONAL LIMITED | |
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