· PRODUCT : KEPITAL® F10-XX+, F15- XX+, F20- XX+, F25- XX+, F30- XX+, F40- XX+, FV- XX+, TX- XX+, US- XX+

· ISSUED DATE : 5. Mar. 2003 (Rev. 4)

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

PRODUCT NAME : POLYOXYMETHYLENE COPOLYMER, ACETAL COPOLYMER

BRAND NAME : KEPITAL F10-XX+, F15-XX+, F20-XX+, F25-XX+, F30-XX+, F40-XX+, FV-XX+, TX-XX+, US--XX+

(*) XX : may be replaced with two digits

(01, 02, 03, 11, 20, 21, 30, 33, 34, 40, 52, 63, etc.)

\+ : may be attached to one alphabet(A, H, S, etc.)

SUPPLIER : KOREA ENGINEERING PLASTICS Co., Ltd.

450, KONGDUCK-DONG, MAPO-KU, SEOUL, KOREA

EMERGENCY CONTACT: Tel. 82-2-707-6840, Fax. 82-2-714-9235

2. COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT	CAS NUMBER
Base Resin	24969-26-4

This product may contain proprietary ingredients.

This is a polymeric material. All constituents are wetted by the polymer system.

This product is considered hazardous under OSHA Regulations due to the release, if overheated, of formaldehyde, an OSHA regulated material.

3. HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=1, FIRE=1, REACTIVITY=0

EMERGENCY OVERVIEW: Pellets or powder with slight to no odor. Combustion and decomposition may produce hazardous fumes. Base resin dust/powder has a US Bureau of Mines relative dust explosion hazard rating of severe. Molten material can cause thermal burns on contact with skin or eyes. Spilled pellets may create a slipping hazard. Overheating may result in release of formaldehyde, which may irritate the eyes and respiratory tract.

POTENTIAL HEALTH EFFECTS:

ROUTES OF EXPOSURE: Skin and eye contact; inhalation of vapors, if overheated.

SIGNS AND SYMPTOMS OF EXPOSURE: No specific information available concerning exposure to the product. If formaldehyde is released as an off-gas, a burning sensation and tearing of the eyes may occur. An irritating odor may be noted.

IMMEDIATE EFFECTS:

INHALATION: No specific information available on the product. Pellets are not considered an inhalation hazard; polymer dust/flake may be considered an inert nuisance particulate. Formaldehyde, which may be released if overheated, may cause irritation of the upper respiratory tract.

SKIN CONTACT: No specific information available on the product. Hot or molten material has the potential to cause thermal burns. Polymer particles can cause mechanical irritation.

EYE CONTACT:: No specific information available on the product. Polymer particles can cause mechanical irritation. Degradation vapors may cause irritation.

INGESTION: No specific information available on the product. However, low toxicity by this route is expected based on the biological activity of high molecular weight polyacetal polymers.

LONG TERM/DELAYED EFFECTS: No specific information available on the product. Formaldehyde may cause respiratory sensitization.

CARCINOGENICITY: No specific information available on the product. Formaldehyde is listed as a potential cancer hazard by OSHA, a propable human carcinogen by The International Agency for Research on Cancer(IARC, 2A), and a substance which can reasonably be anticipated to be a carcinogen by The National Testing Program(NTP). Formaldehyde should not pose a risk if exposures are kept below the OSHA Permissible Exposure Limit. The International Agency for Research on Cancer(IARC) has evaluated carbon black, which may be contained in this product, and found it to be possibly carcinogenis to humans(Group 2B). Any carbon black in this product is wetted by the polymer system, and therefore, present no likelihood of exposure under normal conditions of processing and handling.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURES: No specific information available on the product. Off-gases, which may be released if overheated, may affect those with chronic diseases of the respiratoyr system.

4. FIRST AID MEASURES

INHALATION: Remove to fresh air, Seek medical attention if brething difficulties occur.

SKIN CONTACT: Remove contaminated clothing, jewelry, and shoes immediately.
Wash with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes). Get medical attention, if needed.

EYE CONTACT: Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains.
Get medical attention immediately.

INGESTION: If vomiting occurs, keep head lower than hips to help prevent aspiration.
Get medical attention, if needed.

NOTE TO PHYSICIANS: This product is essentially inert and nontoxic. However, if it is overheated or burns, gases such as carbon monoxide and formaldehyde may be released. Those exposed to off-gases may need to have their arterial blood gases and carboxyhemoglobin levels checked. If the carboxyhemoglobin levels are normal and the exposure occurred in an enclosed space, asphyxia(carbon dioxide replacing oxygen) is a possibility. Fprmaldehyde is a respiratory irritant gas. If patients may have inhaledhigh concentrations of irritating fumes they should be monitored for delayed onset pulmonary edema.

5. FIRE FIGHTING MEASURES

FLASHPOINT: > 93 deg C(> 200 deg F) by Tag Closed Cup Method. Base resin dust/powder has a US Bureau of Mines relative dust explosion hazard rating of severe.

HAZARDOUS PRODUCTS OF COMBUTION: Carbon monoxide and carbon dioxide.

EXTINGUISHING MEDIA: Carbon dioxide, regular dry chemical, regular foam, water spray.

FIREFIGHTING INSTRUCTIONS: Firefighters should wear self-contained breathing apparatus and full fire-fighting turn-out gear(bunker gear). Keep personnel removed from and unwind of fire. Water should be used to keep fire-exposed containers cool. Product burns with a very hot, but very faint blue flame. Water, foam and dry chemical may cause damage to electrical equipment.

6. ACCIDENTAL RELEASE MEASURES

Sweep or gather up spills and place in proper container for recovery or disposal. Keep unnecessary people away, isolate hazard area and deny entry.

7. HANDLING AND STORAGE

HANDLING: Do not handle hot or molten material without appropriate protective equipment. Maintain good housekeeping in work areas. Do not exceed recommended process temperature to minimize release of decomposition products. Do not smoke in areas where polymer dust is present. Appropriate measures should be taken to control the generation and accumulation of dust during conveying and processing operations.

STORAGE: Store in a cool dry place. Maintain dryness of resin.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE GUIDELINES:

POLYOXYMETHYLENE COPOLYMER: No occupational exposure limits established by OSHA, ACGIH or NIOSH.

COMPONENT OR HAZARDOUS DEGRADATION PRODUCT:

FORMALDEHYDE

- OSHA PEL(Permissible Exposure Limt) : TWA - 0.75 ppm/8 hr, STEL - 2 ppm
  ACGIH TLV : 0.3ppm ceiling
- MAK = 0.5ml/m3 - 0.6mg/m3 (Germany)
  (TRGS 500 (Germany) Group III B)
- VME = 0.5 ppm, VLE = 1 ppm
  (Circular of work Ministry of the 19th of July 1982: TR82/38 n(11453, RECT, TR82/46)

CARBON BLACK

- OSHA PEL(Permissible Exposure Limt) : 3.5 mg/cu m
  ACGIH TLV : 3.5 mg/cu m

NUISANCE/INERT DUST

- OSHA PEL(Permissible Exposure Limt) : 15 mg/cu m(total)
  5 mg/cu m(respirable)

NUISANCE PARTICULATES

- ACGIH TLV : 10 mg/cu m(total)
  3 mg/cu m(respirable)

VENTILATION: Given suitable ventilation, it can be assumed that the threshold limits will not be reached. Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

PROTECTIVE EQUIPMENT:

EYES: Safety eyewear recommended

SKIN : When thermal or melt processing, wear long pants, long sleeves, well insulated gloves, and face shield when there is a chance opf contact

INHALATION: A NIOSH approved respirator is recommended if there is a possibility of dust generation above permissible exposure limits or that decomposition vapors may be generated..

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM:	solid/pellets
MELTING POINT:	165 deg C(329 deg F)
VAPOR PRESSURE:	< 0.001mm Hg
SPECIFIC GRAVITY:	1.38 - 1.42
WATER SOLUBILITY:	negligible < 0.1%
VOLATILES:	< 1.0% by weight
ODOR:	slight characteristic odor

10. STABILITY AND REACTIVITY

REACTIVITY: Stable under normal conditions of use and storage.

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials. Do not heat above 235 deg C. Avoid prolonged heating at or above the recommended processing temperature. Recommended melt temperatures 180 – 200 deg C.

INCOMPATIBILITIES: Strong acids and oxidizing materials. Do not compound with PVC or halogen-containing materials, and partially and/or fully crosslinkable thermoplastic elastomers

HAZARDOUS DECOMPOSITION: Trioxane, formaldehyde, and formic acid.

POLYMERIZATION: Will not polymerize.

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· **ISSUED DATE : 5. Mar. 2003 (Rev. 4)**

11. TOXICOLOGICAL INFORMATION

No specific information available on the product.

12. ECOLOGICAL INFORMATION

ECOTOXICITY: No specific information available on the product.

ENVIRONMENTAL INFORMATION: this material is considered to be non-biodegradable.

13. DISPOSAL CONSIDERATIONS

Recycling is encouraged. Dispose in accordance with all applicable regulations.

14. TRANSPORT INFORMATION

No classification currently assigned.

15. REGULATORY INFORMATION

U.S. REGULATIONS:

TSCA: All the ingredients of this product comply with TSCA Inventory Regulations.

SARA: This product does not contain any toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40 CFR 372. Y

LABELING ACCORDING TO EEC Directives:

Not subject to labeling.

GERMANY REGISLATION/REGULATIONS:

Not classified according to German " Hazardous Substance" regulations.

16. OTHER INFORMATION

The information contained herein is based on the present state of our knowledge and does not therefore guarantee certain properties.

Recipients of our product must take responsibility for observing existing laws and regulations.