



MATERIAL SAFETY DATA SHEET (MSDS)

MSDS No. : 4001

Issued Date: DEC.01, 2011

1. CHEMICAL, PRODUCT & COMPANY IDENTIFICATION

PRODUCT NAME : TITALON 4715AF, 4715AFS
MANUFACTURER : TITAN PLASTICS COMPOUNDS CO., LTD
SECTION IN CHARGE : Quality Management
ADDRESS : No.8, S. 1st Rd., Pingtung Export Processing Zone, Pingtung City, 90093, Taiwan, R.O.C
TELEPHONE NUMBER : 886-8-7522966
FACSIMILE NUMBER : 886-8-7522066

2. COMPOSITION / INFORMATION ON INGREDIENTS

COMPOSITION: POLYAMIDE PA46 >70. - <=77. %
Polytetrafluoro ethylene(PTFE) >10- <=20%
Aramid fiber >3- <=7%, Silicone \geq 3%
CAS No. : 50327-77-0 (base resin) .

3. FIRST-AID MEASURES

EYE CONTACT: Immediate first aid is not likely to be required.
This material can be removed with water.

SKIN CONTACT: Immediate first aid is not likely to be required.
This material can be removed with water.

INHALATION: Immediate first aid is not likely to be required.
If symptoms occur, remove to fresh air.
Remove material from eyes, skin and clothing.

INGESTION : Immediate first aid is not likely to be required.
A physician or Poison Control Center can be contacted for advice.
Wash heavily contaminated clothing before reuse.

4. FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA : Water spray, foam, dry chemical, or carbon dioxide

SPECIFIC METHODS : Extinguish the fire with water. A method of extinguishing an ordinary fire may be applied.

SPECIFIC HAZARDS : carbon monoxide (CO); carbon dioxide; ammonia (NH₃); nitrogen oxides (NO_x)

SPECIFIC HAZARD2 : PTEF, the filler, produces a particle-like substance, that can cause polymer fume fever, when it is heated up a temperature higher than the melting point or above 260°C for a long time. It further produces a trace of hydrogen fluoride and carbonyl fluoride at about 400°C, and their quantity increases as the temperature rises.

SPECIAL EQUIPMENT FOR THE PROTECTION OF FIREFIGHTERS : Firefighters, and others exposed, wear self-contained breathing apparatus.
Equipment should be thoroughly decontaminated after use.

5. ACCIDENTAL LEAKAGE MEASURES

PERSONAL PRECAUTIONS :	When pellets were spilled on the road or floor, wipe them off with a besom or cleaner not to cause slipping.
ENVIRONMENTAL PRECAUTION :	Keep out of drains and water courses. Pellets may present a physical ingestion hazard to wildlife due to resemblance to grains.Clean up spills immediately.
METHODS FOR CLEANING UP:	In case of spill, sweep, scoop or vacuum and remove. Flush spill area with water.

6. HANDLING AND STORAGE

HANDLING 1:	Handle in accordance with good industrial hygiene and safety practices.
HANDLING 2:	These practices include avoiding unnecessary exposure and removal of material from eyes, skin and clothing.
HANDLING 3:	Emptied containers retain vapour and product residue. Observe all recommended safety precautions until container is cleaned, reconditioned or destroyed. The reuse of this material's container for non industrial purposes is prohibited and any reuse must be in consideration of the data provided in this material safety data sheet.
STORAGE :1	Keep the substance away from any fire or heat sources for the sake of safe storage.
STORAGE 2:	Stable under normal conditions of handling and storage.

7. EXPOSURE CONTROL / PERSONAL PROTECTION

CONTROL CONCENTRATION	None at present.
PERMISSIBLE CONCENTRATION:	ACGIH has not established specific exposure limits for this material. However, they have established limits for particulates not otherwise regulated (PNOR) and particulates not otherwise classified (PNOC) respectively, which are the least stringent exposure limits applicable to dusts. ACGIH TLV: 10 mg/m ³ (total dust) 8-hr TWA ACGIH TLV:5 mg/m ³ (respirable) 8-hr TWA
ENGINEERING MEASURE:	Provide natural or mechanical ventilation to minimize exposure. If practical, use local mechanical exhaust ventilation at sources of air contamination such as processing equipment.
RESPIRATORY PROTECTION:	Avoid breathing dust. Use approved respiratory protection equipment when airborne exposure limits are exceeded. Consult the respirator manufacturer to determine the appropriate type of equipment for a given application. Observe respirator use limitations specified by the manufacturer.
EYE PROTECTION:	Does not cause significant eye irritation or eye toxicity requiring special protection. Use good industrial practice to avoid eye contact.
HAND PROTECTION:	Wear heat-resisting gloves against burns, when handling molten polymer.
SKIN & BODY PROTECTION:	Wear long sleeve clothes against burns, when handling molten polymer.

8. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE :	Pellet.
ODOR:	Slight characteristic odor.
PHYSICAL STATE:	Solid.
BOILING POINT:	Not applicable.
VOLATILITY:	Not applicable.
MELTING POINT :	295 C
DENSITY:	>1.10
SOLUBILITY:	Insoluble in water.
FLASH POINT:	>375C Estimated
EXPLOSION PROPERTY:	Not applicable.
INFLAMMABILITY:	Inflammable (Designated as inflammable resin by the Fire Service Law).
REACTIVITY WITH WATER:	None.
SELF-REACTIVITY:	None.

9. STABILITY AND REACTIVITY

STABILITY AND REACTIVITY CONDITIONS TO AVOID:	Stable for normal storage or handling. Temperature >340°C and/long residence times should be avoided since thermal degradation occurs
HAZARDOUS REACTIONS:	Hazardous polymerization does not occur.
DECOMPOSITION :	Decomposition temperature> 350 C
HAZARDOUS DECOMPOSITION PRODUCTS:	carbon monoxide (CO); carbon dioxide; ammonia (NH ₃); nitrogen oxides (NO _x)

10. TOXICOLOGICAL INFORMATION

SKIN CORROSIVE PROPERTIES :	No finding
SENSITIZING & IRRITANT EFFECTS:	No finding
ACUTE TOXICITY (INCLUDING LD ₅₀)	No finding (LD ₅₀ oral rate > 5000mg/kg)
SUBACUTE TOXICITY :	No finding
CHRONIC TOXICITY :	No finding

MUTAGENECITY (Micro organisms, chromosomal aberration): No finding
REPRODUCTIVE TOXICITY : No finding
TERATOGENICITY : No finding

11. ECOLOGICAL INFORMATION

BIODEGRADABILITY: No finding.
BIOACCUMULATION : No finding.
FISH TOXICITY: No finding.

12. DISPOSAL CONSIDERATION

WASTE FROM RESIDUES 1 : This is designated as waste plastics among industrial wastes by the Wastes Disposal Law. Disposal waste through licensed wastes handlers or local autonomous bodies if they are handling wastes disposal.

WASTE FROM RESIDUES 2 : When disposed by incineration, use the well controlled incinerators in accordance with the Wastes Disposal Law, Air Pollution Control Law and Water Pollution Prevention Law.

13. TRANSPORT CONSIDERATION

GENERAL PRECAUTIONS Keep this material drying during transport
SPECIAL PRECAUTIONS No special precautions have to be met

14. REGULATORY INFORMATION

FIRE SERVICE LAW: Inflammable synthetic resin.
WASTE DISPOSAL LAW: Waste plastics among industrial wastes.

15. OTHER INFORMATION

HANDLING OF THE DETAILS GIVEN ABOVE: Details given above are based on references, information and data available at this moment, but no warranty can be made on exactness of these details. They are also prepared on the assumption that the product will be handled in a normal way. For special handling, adequate safety and environmental measures should be taken in respect to its applications. Our products are not specifically intended for implants for medical and dental applications, and therefore they are not recommended for such applications. "No finding" in this report means that there will be no hazard in general, but no proving data is available at the time of reporting.

WHERE TO CALL FOR FURTHER INFORMATION : 08-7522966