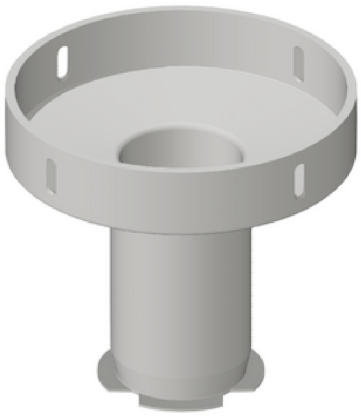
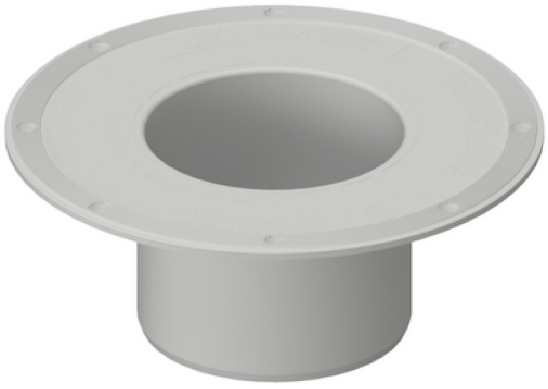
WONDERCAP

PO Box 130
Ashmore City
Queensland 4214
Australia

For more information
Phone: (07) 5539 3665
Email: *sales@wondercap.com.au*
or visit *www.wondercap.com.au*



Wondercap Base Inserts - Made of Polypropylene copolymer
CAS No. :9010-79-1



Wondercap Puddle Flanges - Made of ABS - Acrylonitrile-Butadiene-Styrene polymer
CAS No. :9003-56-9

Please see attached Material Date Sheets for Polypropylene copolymer & ABS

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: GENERAL HOMOPOLYMER AND COPOLYMER POLYPROPYLENE (TALC)
Product Description: Polyolefin, see Section 16 for applicable grades.

Intended Use: Extrusion and moulding

COMPANY IDENTIFICATION

Supplier: **ExxonMobil Chemical Asia Pacific (Regn. No. 52893724C)**
(A Division Of ExxonMobil Asia Pacific Pte Ltd - Regn. No. 196800312N)
POLYOLEFINS
1 Harbour Front Place
#06-00 Harbour Front Tower One 098633 Singapore

24 Hour Emergency Telephone 800-101-2201
Supplier General Contact +65 6885 8339

Local Contact:

Country	Emergency Telephone Number
China	4001-204937
Hong Kong	800-968-793
India	000-800-100-7141
Japan	+81-3-45209637
Malaysia	1-800-815-308
Republic of Korea	00-308-13-2549
Thailand	001-800-13-203-9987

This (M)SDS is a generic document with no country specific information included.

SECTION 2 HAZARDS IDENTIFICATION

This material is not hazardous according to UN GHS Criteria. Classification includes all GHS hazard classes. For hazard categories with two cut-off/concentration limits, classification was based on the higher limit.

Other hazard information:

PHYSICAL / CHEMICAL HAZARDS

WARNING: May form combustible dust concentrations in air (during processing/handling). Thermal burn hazard - contact with hot material may cause thermal burns. Material can accumulate static charges which may cause an ignition. Spilled pellets present a slipping hazard on hard surfaces.

HEALTH HAZARDS

If dust is generated, it could scratch the eyes and cause minor irritation to the respiratory tract. When heated, the vapour/fumes given off may cause respiratory tract irritation.

ENVIRONMENTAL HAZARDS

No significant hazards.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

No Hazardous Substance(s) or Complex Substance(s) required for disclosure.

SECTION 4 FIRST AID MEASURES

INHALATION

At ambient/normal handling temperatures, no adverse effects due to inhalation of dust are expected. In case of adverse exposure to vapours and / or aerosols formed at elevated temperatures, immediately remove the affected victim from exposure. Administer artificial respiration if breathing is stopped. Keep at rest.

SKIN CONTACT

Wash contact areas with soap and water. For hot product: Immediately immerse in or flush affected area with large amounts of cold water to dissipate heat. Cover with clean cotton sheeting or gauze and get prompt medical attention.

EYE CONTACT

Flush thoroughly with water for at least 15 minutes. Get medical assistance.

INGESTION

No adverse effects due to ingestion are expected.

ACUTE AND DELAYED SYMPTOMS/EFFECTS

See Toxicological Section

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight streams of water

FIRE FIGHTING

Fire Fighting Instructions: Use standard firefighting procedures and consider the hazards of other involved materials. Assure an extended cooling down period to prevent re-ignition. Evacuate area. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to

cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Explosion: Avoid generating dust; fine dust dispersed in air in sufficient concentration and in the presence of an ignition source is a potential dust explosion hazard.

Hazardous Combustion Products: Flammable hydrocarbons, Incomplete combustion products, Oxides of carbon, Smoke, Fume

FLAMMABILITY PROPERTIES

Flash Point [Method]: N/D
Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

PROTECTIVE MEASURES

Avoid contact with spilled material. Dust Deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (for example, clearing dust surfaces with compressed air). Prevent dust exposure to ignition sources. For example, use non-sparking tools and prohibit smoking, flares, sparks or flames in immediate area. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

SPILL MANAGEMENT

Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Spilled pellets present a slipping hazard on hard surfaces. Prevent dust cloud. Small Dry Spills: With clean shovel, place material into clean, dry container and cover loosely; move containers from spill area.

Water Spill: Stop leak if you can do so without risk. Confine the spill immediately with booms. Warn other shipping. Skim from surface

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Prevent entry into waterways, sewers, basements or confined areas. For Large Spills: Cover spill with plastic sheet or tarpaulin to minimise spreading.

SECTION 7 HANDLING AND STORAGE

HANDLING

Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do

not accumulate on surfaces. Dust from material can accumulate electrostatic charges due to friction from transfer and mixing operations and cause an electrical spark (ignition source). Provide adequate precautions to ignition sources, such as electrical grounding and bonding, inert atmosphere or non-sparking tools. However, bonding and grounds may not eliminate the hazard for static accumulation. Consult local applicable standards for guidance. Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids and EN 61241, Electrical Apparatus for Use in the Presence of Combustible Dust for safe handling. Avoid elevated temperatures for prolonged periods of time. Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Prevent small spills and leakage to avoid slip hazard. Care should be taken when storing and handling this product. Apart from the specific nature of the polymer product, conditions such as humidity, sunlight and temperature have an influence on the way the product behaves during storage and handling. Special attention should be paid to avoid inappropriate stacking of palletised bags or other package units. Indeed, polymer products may be dimensionally unstable under certain conditions. Avoid conditions generating heat during transfer operations.

Loading/Unloading Temperature: [Ambient]

Transport Temperature: [Ambient]
Transport Pressure: [Ambient]

Static Accumulator: This material is a static accumulator.

STORAGE

The type of container used to store the material may affect static accumulation and dissipation.
Storage Temperature: [Ambient]
Storage Pressure: [Ambient]

Suitable Containers/Packing: Bulk Containers; Drums; Bags; Hopper Cars; Octatainer; Silos
Suitable Materials and Coatings (Chemical Compatibility): Polyethylene; Aluminium

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits/standards for materials that can be formed when handling this product: For dusty conditions, ACGIH recommends for insoluble and poorly soluble particles not otherwise specified an 8-hour TWA of 10 mg/m3 (inhalable particles), 3 mg/m3 (respirable particles).

Biological limits

No biological limits allocated.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

Adequate ventilation should be provided so that exposure limits are not exceeded. SPECIAL PRECAUTIONS: Should significant vapours/fumes be generated during thermal processing of this product, it is recommended that work stations be monitored for the presence of thermal degradation by-

products which may evolve at elevated temperatures (for example, oxygenated components). Processors of this product should assure that adequate ventilation or other controls are used to control exposure. It is recommended that the current ACGIH-TLVs for thermal degradation by-products be observed. Contact your local sales representative for further information. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product are designed and maintained to minimize dust generation and accumulation. Ensure that dust-handling systems (such as exhaust ducts, dusts collectors, vessels, and processing equipment) are designed to minimize the potential for dust ignition and prevent explosion propagation. For example, use explosion relief vents, an explosion suppression system or inert equipment internals. Additional examples of proper equipment include using only appropriately classified electrical equipment and powered industrial trucks.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

Particulate air-purifying respirator approved for dust or oil mist is recommended.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapour warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

If product is hot, thermally protective, chemical resistant gloves are recommended. If contact with forearms is likely, wear gauntlet style gloves.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

If product is hot, thermally protective, chemical resistant apron and long sleeves are recommended.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Solid
Form: Granule, Pellet
Colour: Clear to Opaque, White to Off-White
Odour: None to Mild
Odour Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density: N/D
Bulk Density: 0.4 g/cc at 20 °C - 0.7 g/cc at 20 °C [In-house method]
Density: 890 kg/m³ (7.43 lbs/gal, 0.89 kg/dm³) - 920 kg/m³ (7.68 lbs/gal, 0.92 kg/dm³) [In-house method]
Flammability (Solid, Gas): N/D
Flash Point [Method]: N/D
Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Autoignition Temperature: N/D
Boiling Point / Range: N/A
Decomposition Temperature: N/D
Vapour Density (Air = 1): N/A
Vapour Pressure: N/A
Evaporation Rate (n-butyl acetate = 1): N/A
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): N/A
Solubility in Water: Negligible
Viscosity: N/D
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/A
Melting Point: 140°C (284°F) - 170°C (338°F) [In-house method]
Hygroscopic: No

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Avoid elevated temperatures for prolonged periods of time.

MATERIALS TO AVOID: Fluorine, Strong oxidisers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on chemical structure (polymers).
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
Ingestion	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on chemical structure (polymers).
Skin	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on chemical structure (polymers).
Skin Corrosion/Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on chemical structure (polymers).
Eye	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on chemical structure (polymers).
Sensitisation	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on chemical structure (polymers).
Aspiration: No end point data for material.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: No end point data for material.	Not expected to be a germ cell mutagen. Based on chemical structure (polymers).
Carcinogenicity: No end point data for material.	Not expected to cause cancer. Based on chemical structure (polymers).
Reproductive Toxicity: No end point data for material.	Not expected to be a reproductive toxicant. Based on chemical structure (polymers).
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on chemical structure (polymers).

OTHER INFORMATION

For the product itself:

Dust may be irritating to the eyes and respiratory tract.
Elevated temperatures or mechanical action may form vapours, mists or fumes which may be irritating to the eyes and respiratory tract.

Contains:

Additives that are encapsulated in the polymer. Under the normal conditions for processing and use of this polymer the encapsulated additives are not expected to pose any health hazard. However, grinding of the polymer is not recommended without the use of appropriate measures to control exposure (see Section 8 - Engineering Controls).

IARC Classification:
The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--
1 = IARC 1 2 = IARC 2A 3 = IARC 2B

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY
Material -- Not expected to be harmful to aquatic organisms.
Material -- Not expected to be harmful to terrestrial organisms.

MOBILITY
Material -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY
Biodegradation:
Material -- Expected to be persistent.
Hydrolysis:
Material -- Transformation due to hydrolysis not expected to be significant.
Photolysis:
Material -- Transformation due to photolysis not expected to be significant.
Atmospheric Oxidation:
Material -- Transformation due to atmospheric oxidation not expected to be significant.

BIOACCUMULATION POTENTIAL
Material -- Potential to bioaccumulate is low.

SECTION 13 DISPOSAL CONSIDERATIONS

DISPOSAL METHODS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS
Suitable routes of disposal are supervised incineration, preferentially with energy recovery, or appropriate recycling methods in accordance with applicable regulations and material characteristics at the time of disposal.

SECTION 14 TRANSPORT INFORMATION

LAND (ADR/RID) : Not Regulated for Land Transport

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

Material is not hazardous according to UN GHS Criteria.

REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS

Listed or exempt from listing/notification on the following chemical inventories: Please contact Customer Service (see Section 1 for supplier contact information).

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Section 16: Materials Covered information was modified.
Revision Date: 08 Oct 2017

THIS SDS COVERS THE FOLLOWING MATERIALS: GENERAL HOMOPOLYMER AND COPOLYMER POLYPROPYLENE (TALC) | PP AP03B | PP AP3AW | PP1055E2 | PP7032E3 | PP7033E3 | PP7054L1 | PP7075L1 | PP7085E1 | PP7373E2 | PP8013L1

The information and recommendations contained herein are, to the best of ExxonMobil's knowledge and belief, accurate and reliable as of the date issued. You can contact ExxonMobil to insure that this document is the most current available from ExxonMobil. The information and recommendations are offered for the user's consideration and examination. It is the user's responsibility to satisfy itself that the product is suitable for the intended use. If buyer repackages this product, it is the user's responsibility to insure proper health, safety and other necessary information is included with and/or on the container. Appropriate warnings and safe-handling procedures should be provided to handlers and users. Alteration of this document is strictly prohibited. Except to the extent required by law, re-

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DGN: 4409220PAP (1025481)

ExxonMobil

ExxonMobil™ AP3AW

Polypropylene Impact Copolymer

Product Description

An UV stabilized medium impact copolymer resin designed for automotive battery cases.

General

Availability [1]	▪ Asia Pacific		
Features	▪ High Stiffness ▪ Low Warpage	▪ Medium Flow ▪ Medium Impact Resistance	▪ UV Resistant
Uses	▪ Automotive Applications	▪ Automotive Under the Hood	▪ Battery Cases
Appearance	▪ Natural Color		
Form(s)	▪ Pellets		
Processing Method	▪ Injection Molding		
Revision Date	▪ 07/01/2017		

Physical	Typical Value (English)		Typical Value (SI)		Test Based On
Melt Mass-Flow Rate (MFR) (230°C/2.16 kg)	10	g/10 min	10	g/10 min	ASTM D1238
Density	0.900	g/cm³	0.900	g/cm³	ExxonMobil Method

Mechanical	Typical Value (English)		Typical Value (SI)		Test Based On
Tensile Strength at Yield					ASTM D638
2.0 in/min (51 mm/min)	3930	psi	27.1	MPa	
Tensile Stress at Yield	3790	psi	26.1	MPa	ISO 527-2/50
Elongation at Yield (2.0 in/min (51 mm/min))	5.5	%	5.5	%	ASTM D638
Tensile Strain at Yield	5.7	%	5.7	%	ISO 527-2/50
Flexural Modulus - 1% Secant					
0.051 in/min (1.3 mm/min)	204000	psi	1410	MPa	ASTM D790A
0.51 in/min (13 mm/min)	231000	psi	1590	MPa	ASTM D790B
Flexural Modulus (0.079 in/min (2.0 mm/min))	188000	psi	1300	MPa	ISO 178

Impact	Typical Value (English)		Typical Value (SI)		Test Based On
Notched Izod Impact					ASTM D256A
0°F (-18°C)	0.91	ft·lb/in	49	J/m	
73°F (23°C)	2.2	ft·lb/in	120	J/m	
Notched Izod Impact Strength					ISO 180/1A
-40°F (-40°C)	2.5	ft·lb/in²	5.3	kJ/m²	
-4°F (-20°C)	2.7	ft·lb/in²	5.6	kJ/m²	
73°F (23°C)	6.6	ft·lb/in²	14	kJ/m²	
Charpy Notched Impact Strength					ISO 179/1eA
-22°F (-30°C)	2.0	ft·lb/in²	4.2	kJ/m²	
-4°F (-20°C)	2.1	ft·lb/in²	4.4	kJ/m²	
32°F (0°C)	3.1	ft·lb/in²	6.5	kJ/m²	
73°F (23°C)	5.6	ft·lb/in²	12	kJ/m²	
Gardner Impact					ASTM D5420
-20°F (-29°C), 0.125 in (3.18 mm), Geometry GC	156	in·lb	17.6	J	

Thermal	Typical Value (English)		Typical Value (SI)		Test Based On
Heat Deflection Temperature (1.80 MPa)	132	°F	55.8	°C	ISO 75-2/A
Heat Deflection Temperature (0.45 MPa)	197	°F	91.7	°C	ISO 75-2/Bf
Deflection Temperature Under Load (DTUL) at 66psi - Unannealed	210	°F	99.0	°C	ASTM D648
DTUL @ 66psi - Annealed	239	°F	115	°C	ASTM D648

ExxonMobil™ AP3AW
Polypropylene Impact Copolymer

Hardness	Typical Value (English)	Typical Value (SI)	Test Based On
Rockwell Hardness	94	94	ASTM D785

Legal Statement

This product, including the product name, shall not be used or tested in any medical application without the prior written acknowledgement of ExxonMobil Chemical as to the intended use. For detailed Product Stewardship information, please contact Customer Service.

Contact your ExxonMobil Chemical Customer Service Representative for potential food contact application compliance (e.g. FDA, EU, HPFB).

Notes

Typical properties: these are not to be construed as specifications.

[1] Product may not be available in one or more countries in the identified Availability regions. Please contact your Sales Representative for complete Country Availability.

For additional technical, sales and order assistance: www.exxonmobilchemical.com/ContactUs

exxonmobilchemical.com

Taita Chemical Company, Limited / Kaohsiung Branch
No.5, Industrial 1st Rd., Lin-Yuan, Kaohsiung, Taiwan
TEL：886-7-641-3201
FAX：886-7-641-4544

SAFETY DATA SHEET

DATE ISSUED: 2004.11.03 DATE REVISED: 2022.01.27 REV. No.: 010

1. COMPANY IDENTIFICATION

PRODUCT NAME : 1000、1000T、1000D、1003、1250、3000、3000D、3100、3100M、3000P、5000、5000S、5002、6000、6000P、5000W、5000M、5000F、3100R

SUPPLIER :TAITA CHEMICAL CO. LTD., / KAOHSIUNG BRANCH

COMPANY ADDRESS: No.5, Industrial 1st Rd., Lin-Yuan, Kaohsiung, Taiwan

TELEPHONE: 886-7-7040988 EXT 1355

FACSIMILE: 886-7-6414544 EXT 1355

2. HAZARD IDENTIFICATION ：

GHS classification:

This product is not hazardous under United Nations GHS Parts 2,3 and 4.

Most Important Hazards	None
Adverse Human Health Effects	None
Environmental Effects	None
Physical and Chemical Hazards	None

3. COMPOSITION / INFORMATION ON INGREDIENTS

PRODUCT DESCRIPTION : Acrylonitrile-Butadiene-Styrene copolymer

PRODUCT IDENTIFIER : TAITALAC ABS

Content : 100%

Formula : $(C_3H_3N)_x - (C_4H_6)_y - (C_8H_8)_z$

CAS No. : 9003-56-9

4. FIRST AID MEASURES

Eye Contact : In case of pellets or powder, flush with plenty of water for at least 15 minutes. Seek medical advice if any dust particles still remain. In case of gases evolving from melted resin of high temperature, flush with plenty of water for at least 15 minutes. Seek medical advice if necessary.

Skin Contact :Wash skin thoroughly with soap and water. Seek medical attention if rash or burn

Ingestion : Induce vomiting. Rinse mouth with water. Seek medical advice if necessary.

Inhalation : In case of gases evolving from melted resin, move subject to fresh air. Treat symptomatically.

5. FIRE FIGHTING MEASURES

Extinguishing Measures：At the time of fire, high heat as well as gases containing dense black smoke, carbon dioxide, carbon monoxide, nitrogen oxides, etc. are generated. At the time of fire-fighting, wear proper protective clothing and respirators.

Extinguishing Media：Water, water spray, and various kinds of fire-extinguishers may be used.

Special Fire-Fighting Procedure：Self contained breathing apparatus.

Fire and Explosion Hazards：None

6. ACCIDENTAL RELEASE MEASURES

Environmental Precautions： In case it is spilled on the road or floor, there is danger of slipping and falling. Thus, collect the spilled pellets and dispose of them. If it is accidentally released, it may cause environmental contamination, so immediately collect all that have been released.

Methods for Cleaning up： Recovery if not contaminated or Disposal

7. HANDLING AND STORAGE

Handling： Gases and fumes in the drying and molding process may cause irritation to the skin and respiratory tract. Prevent contact with skin and eyes. Use industrial hygiene practices. Provide adequate ventilation. Secondary operation such as grinding, sanding or sawing may produce a dust explosion hazard. Use aggressive housekeeping activities to prevent dust accumulation; employ bonding, grounding, venting and explosion relief provisions in accordance with accepted engineering practices.

Storage： Store in a dry place away from moisture, excessive heat and sources of ignition. Avoid direct sunlight. To avoid risk of collapse, do not stack unsupported boxes too high.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Threshold Limit Value ：Not determined

Ventilation ：Necessary to exclude dust, fumes and gases.

PERSONAL PROTECTION：

Eye：Wear safety glasses for general purpose. Wear chemical goggles for cleaning molding machines.

Skin：When handling pellets avoid prolonged or repeated contact with skin，there is no special need of gloves, But when handing molten resins, wear gloves having good Thermal insulation. Ordinary work clothing will do，but in case of handling molten resins, wear work clothing having long sleeves.

Respiratory：Wear masks for cleaning molding machines.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance**:** Milky off-white Solids

Melting Point **:** Softening above 100 ℃

Vapor Pressure (mmHg) **:** None

Specific Gravity **:** 1.03-1.08

Solubility **:** Insoluble in water

Volatility**:** None

Flashing Point **:** 400℃

Auto Ignition Point **:** 466℃.

Upper Explosion Limit **:** None

Lower Explosion Limit **:** None

Stability **:** Stable under recommended conditions of storage and handling

Reactivity with Water **:** No

Flammability (solid, gas)**:** Not applicable

Explosive properties**:** Not explosive

Oxidizing properties **:** Not oxidizing

10. STABILITY AND REACTIVITY

Reactivity: Non-reactive under normal handling and storage conditions

Chemical stability: Stable under normal handling and storage conditions

Possible hazardous reaction: Polymerization will not occur.

Conditions to avoid: Avoid temperatures above 300 °C. Exposure to elevated temperatures can cause product to decompose.

Incompatible materials: Strong oxidizing agents, Gasoline, aldehydes, ketone

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Processing may release fumes and other decomposition products. At temperatures exceeding melt

temperatures, polymer fragments can be released. Fumes can be irritating. Decomposition products can include and are not limited to: Combustible gases. In case of fire may be liberated: smoke, Styrene-Monomer, aldehydes and acids (organic), carbon monoxide and carbon dioxide (CO2).

11. TOXICOLOGICAL INFORMATION

Irritation：Fumes or vapors generated from decomposing resin may be irritant to eyes.

Acute Toxicity (Includes 50% Lethal Dose)：Oral LD_{50} (Rat) > 5g/kg (Assumed Value)

Sub-Acute Toxicity： No Information

Mutagenicity ：Not determined.

12. ECOLOGICAL INFORMATION

To avoid being taken by ocean species or birds, disposal of the waste to the ocean and water sources is inhibited.

13. DISPOSAL INFORMATION

It shall be handled in accordance with the laws, rules, and ordinances related to the disposal of waste matters.

14. TRANSPORTATION INFORMATION：

TAITALAC

ADR/RID	Not regulated
AND/ADNR	Not regulated
IMDG	Not regulated
IATA	Not regulated

Consult TAITALAC'safety department for any further information

15. REGULATORY INFORMATION：

Not available.

16. OTHER INFORMATION：

Pre-Registration Number of REACH:

EC Number	Tonnage Band	Submission Number	Pre-registration Number	Deadline
202-851-5	100~1000	LV488022-13	05-2117246118-46-0000	5/31/2013
203-466-5	10~100	ZZ488326-77	05-2117247483-42-0000	11/30/2010
203-450-8	10~100	YB488397-17	05-2117247976-27-0000	11/30/2010
203-755-6	1~10	HW488480-05	05-2117248420-53-0000	5/31/2018

台達化學工業股份有限公司 **Taita Chemical Company, Limited**

總公司：台北市內湖區基湖路 39 號 12 樓
電話：(02)8751-6888
傳真：(02)2650-3260

Product information
Version：1.0

TAITALAC 1000

ABS Resin

Acrylonitrile Butadiene Styrene (ABS) Resin

Characteristics

- Injection
- Medium high impact
- Good flow for process
- High gloss

Applications

- Toy and furniture components
- Office equipment
- Kitchen appliances / House-ware
- Battery / Shoes

Properties	Test	Test Condition	SI unit	
			Unit	s.p.
Rheological Properties				
Specific Gravity	ISO 1183	23℃	g/cm^3	**1.03**
Melt Volume Rate	ISO 1133	220℃, 10kg load	cm^3/10min	**16.0**
Mechanical Properties				
Izod Impact Strength	ISO 180/1A	23℃, Notched	KJ/m^2	**23**
Charpy impact strength	ISO 179/1A	23℃, Notched	KJ/m^2	**24**
Tensile Strength at Yield	ISO 527	23℃, 50 mm/min	MPa	**43**
Tensile Strength at Break	ISO 527	23℃, 50 mm/min	MPa	**34**
Elongation at Break	ISO 527	23℃, 50 mm/min	%	**30**
Flexural Yield	ISO 178	23℃, 2.0 mm/min	MPa	**67**
Flexural Modulus	ISO 178	23℃, 2.0 mm/min	GPa	**1.9**
Thermal Properties				
Heat Distortion Temperature	ISO 75	unannealing 1.8MPa	℃	**84**
Vicat Softening Temperature	ISO 306	50°C/hr , 1 kg load	℃	**96**
Physical Properties				
Rockwell Hardness	ISO 2039-2	23℃, R-scale	R-scale	**105**
Mold Shrinkage	ISO 294-4	60×60×2mm S_{Flow}	%	≦ **0.4**
Moisture Absorption Equilibrium	ISO 62	23°C/50% RH	wt %	≦ **0.3**
Flammability				
	UL-94	1/16 inch	No E50263	**HB**
Electrical				
Relative Temperature Index	UL-746B	0.062 inch above	℃	**60**
Hot Wire Ignition	UL-746A	0.062 inch above	Secs	**17**
High Current Arc Ignition	UL-746A	0.062 inch above	Arcs	**200**
Arc Tracking Rate	UL-746A	0.062 inch above	in/min	**0**

Note：The data listed represent average values and are believed to be reliable. They are given for information; no guarantee of their accuracy is made.