MATERIAL SAFETY DATA SHEET

MSDS# 1703

SECTION 1

QUADRANT EPP
2120 FAIRMONT AVENUE
P.O. BOX 14235
READING, PA. 19612-4235

TELEPHONE NUMBERS:
PRODUCT INFORMATION (QUADRANT EPP) - 610-320-6600
TRANSPORTATION EMERGENCY (CHEMTREC) - 800-424-9300

MATERIAL IDENTIFICATION

PRODUCT NAME: TECHTRON PSBG PPS (BG-1300 / 1326* / 4515**)
CHEMICAL NAME: POLYPHENYLENE SULFIDE (PPS)
CAS NO.: 26125-40-6
PRODUCT USE: ENGINEERING THERMOPLASTIC STOCK SHAPE FOR SUBSEQUENT FABRICATION.
TSCA INVENTORY STATUS: ALL REPORTABLE INGREDIENTS ARE LISTED IN THE TSCA CHEMICAL SUBSTANCE INVENTORY.

SECTION 2

HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>Identity</th>
<th>CAS#</th>
<th>Concentration</th>
<th>OSHA PEL</th>
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<tbody>
<tr>
<td>POLYPHENYLENE SULFIDE</td>
<td>26125-40-6</td>
<td>-</td>
<td>NOT LISTED</td>
</tr>
<tr>
<td>SOLID LUBRICANT</td>
<td>-</td>
<td>-</td>
<td>NOT LISTED</td>
</tr>
<tr>
<td>FIBRE REINFORCEMENT</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
<td>*GRAPHITE</td>
<td>7782-42-5</td>
<td>2MG/M³</td>
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</tr>
<tr>
<td>**MICA C-3000</td>
<td>12001-26-2</td>
<td>3MG/M³</td>
<td></td>
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<tr>
<td>**CARBON BLACK</td>
<td>1333-86-4</td>
<td>3.5 MG/M³</td>
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</table>

SECTION 3

HEALTH HAZARD DATA

ACUTE OR IMMEDIATE EFFECTS: ROUTES OF ENTRY AND SYSTEMS.

INGESTION: NOT A PROBABLE ROUTE OF EXPOSURE.
SKIN: MOLTEN PLASTIC CAUSES THERMAL BURNS.
EYE: MECHANICAL IRRITATION ONLY.
INHALATION: SHAPES NOT RESPIRABLE.
SECTION 4

EMERGENCY FIRST AID

IF EXPOSED TO FUMES FROM OVERHEATING, MOVE TO FRESH AIR. CONSULT A PHYSICIAN IF SYMPTOMS PERSIST.

WASH SKIN WITH SOAP AND PLENTY OF WATER.

FLUSH EYES WITH WATER. CONSULT A PHYSICIAN IF SYMPTOMS PERSIST.

IF MOLTEN PLASTIC CONTACTS SKIN, COOL RAPIDLY WITH COLD WATER. DO NOT ATTEMPT TO PEEL PLASTIC FROM SKIN. OBTAIN MEDICAL ATTENTION TO THERMAL BURN.

CHRONIC EFFECTS: NONE KNOWN.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY THIS MATERIAL: NONE KNOWN

SECTION 5

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: >480 C./ 896 F.

UNUSUAL FIRE, EXPLOSION HAZARDS: NONE KNOWN.

HAZARDOUS COMBUSTION OR DECOMBUSTION PRODUCTS: CARBON MONOXIDE, CARBON DIOXIDE, SULFUR OXIDES AND CARBONYL SULFIDE. DEGRADATION UNDER VACUUM AT 450 C./842 F. MAY YIELD HYDROGEN SULFIDE. PYROLYSIS UNDER VACUUM AT 275 C./527 F. MAY YIELD DIBENZOTHIOPHENE.

SPECIAL FIRE FIGHTING INSTRUCTIONS: FIRE FIGHTERS AND OTHERS EXPOSED TO PRODUCTS OF COMBUSTION SHOULD WEAR FULL PROTECTIVE CLOTHING INCLUDING SELF-CONTAINED BREATHING APPARATUS. COOL FIRE EXPOSED CONTAINERS AND SURROUNDING EQUIPMENT AND STRUCTURES. FIRE FIGHTING EQUIPMENT SHOULD BE THOROUGHLY DECONTAMINATED AFTER USE.

EXTINGUISHING MEDIA: WATER FOG/Spray, FOAM, DRY CHEMICAL, CO₂.

PHYSICAL HEALTH HAZARDS:
DUST MAY FORM EXPLOSIVE MIXTURES WITH AIR. AVOID DUST FORMATION AND CONTROL IGNITION SOURCES. ALL PLASTIC DUST PARTICLES SUSPENDED IN AIR ARE COMBUSTIBLE AND MAY BE EXPLOSIVE. KEEP AWAY FROM HEAT, SPARKS, FLAME, AND OTHER IGNITION SOURCES. PREVENT DUST ACCUMULATIONS AND DUST CLOUDS. EMPLOY GROUNDING, VENTING, AND EXPLOSIVE RELIEF PROVISIONS IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICES AND NFPA PROVISIONS IN ANY PROCESS CAPABLE OF GENERATING DUST AND/OR STATIC ELECTRICITY. EXPLOSION HAZARDS APPLY ONLY TO DUSTS, NOT GRANULAR FORMS OF THIS PRODUCT. SEE ALSO SPECIAL PRECAUTIONS SECTION BELOW.
SECTION 6

ACCIDENTAL RELEASES

SPILL OR RELEASE: CLEAN UP BY VACUUMING OR SWEEPING TO PREVENT FALLS.

SECTION 7

STORAGE CONDITIONS

DRY STORAGE. KEEP CONTAINERS CLOSED TO PREVENT CONTAMINATION.

SECTION 8

PROTECTION INFORMATION

EYE: SAFETY GLASSES ARE RECOMMENDED TO PREVENT PARTICULATE MATTER FROM ENTERING EYES WHILE GRINDING OR MACHINING.

SKIN: PROTECTIVE GLOVES ARE REQUIRED WHEN HANDLING HOT PLASTIC. ALSO, LONG SLEEVE COTTON SHIRT AND LONG PANTS IF HANDLING MOLTEN PLASTIC.

VENTILATION: LOCAL EXHAUST AT PROCESSING EQUIPMENT TO KEEP PARTICULATES BELOW 5 MG/M³, THE OSHA LIMIT FOR RESPIRABLE DUSTS. GRINDING AND MACHINING OF PARTS SHOULD BE REVIEWED TO ASSURE THAT PARTICULATE LEVELS ARE KEPT AT RECOMMENDED LEVELS.

RESPIRATOR: NONE UNDER NORMAL PROCESSING, IF VENTILATION IS ADEQUATE.
SECTION 9

PHYSICAL/CHEMICAL DATA

APPEARANCE: STOCK SHAPE MAY BE IN THE FORM OF ROD OR PLATE.

ODOR: ESSENTIALLY ODORLESS.

MELTING POINT: 285-300 C. / 545-572 F.

SOLUBILITY IN WATER: INSOLUBLE.

VOLATILE CONTENT %: <0.5%

SPECIFIC GRAVITY: 1.43

PRECAUTIONS FOR REPAIR & MAINTENANCE OF CONTAMINATED EQUIPMENT:

ELIMINATE IGNITION SOURCES:
TRANSFER FROM STORAGE WITH A MINIMUM AMOUNT OF DUSTING. GROUND ALL TRANSFER, BLENDING, AND DUST COLLECTING EQUIPMENT TO PREVENT STATIC SPARKS IN ACCORDANCE WITH NFPA 70 "NATIONAL ELECTRIC CODE". REVIEW AND COMPLY WITH ALL RELEVANT NFPA PROVISIONS, INCLUDING BUT NOT LIMITED TO NFPA 484 AND NFPA 654 RELATED TO COMBUSTIBLE DUST HAZARDS. REMOVE ALL IGNITION SOURCES FROM MATERIAL HANDLING, TRANSFER, AND PROCESSING AREAS WHERE DUST MAY BE PRESENT. LOCAL EXHAUST VENTILATION SHOULD BE PROVIDED IN WORK AREA.

SECTION 10

HAZARDOUS REACTIVITY

STABILITY AT ROOM TEMPERATURE: STABLE.

MATERIALS TO AVOID: NO KNOWN INCOMPATIBILITIES.

CONDITIONS TO AVOID: HEATING ABOVE 370 C./698 F. FOR PROLONGED PERIODS.
SECTION 11

TOXICOLOGICAL INFORMATION

CHRONIC TOXICITY: "BG" SERIES DOES NOT APPEAR TO POSSESS ANY TOXICOLOGICAL PROPERTIES.

MEDICAL CONDITIONS PRONE TO AGGRAVATION BY EXPOSURE: THERMAL DECOMPOSITION PRODUCTS MAY BE IRRITATING TO THE MUCUS MEMBRANES AND RESPIRATORY TRACT.

CARCINOGENICITY: NONE KNOWN.

SECTION 12

ECOLOGICAL INFORMATION

AQUATIC TOXICITY: TOXICITY IS EXPECTED TO BE LOW BASED ON INSOLUBILITY OF POLYMER IN WATER.

SECTION 13

DISPOSAL

SPILL OR RELEASE: CLEAN UP BY VACUUMING OR WET SWEEPING TO MINIMIZE DUST EXPOSURE.

WASTE DISPOSAL: RECYCLING IS ENCOURAGED, LANDFILL OR INCINERATION IN COMPLIANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.

SECTION 14

TRANSPORT INFORMATION

DOT HAZARD CLASS: NA
SHIPPING NAME: NA
SECTION 15A
REGULATORY INFORMATION

SECTION 313 SUPPLIER NOTIFICATION:
(SARA TITLE III-TOXIC CHEMICALS LIST)


STATE RIGHT TO KNOW LAWS

NO SUBSTANCES ON THE STATE HAZARDOUS LIST, FOR THE STATES INDICATED BELOW, ARE USED IN THE MANUFACTURE OF PRODUCTS ON THIS MATERIAL SAFETY DATA SHEET, WITH THE EXCEPTIONS INDICATED. WHILE WE DO NOT SPECIFICALLY ANALYZE THESE PRODUCTS, OR THE RAW MATERIALS USED IN THEIR MANUFACTURE, FOR SUBSTANCES ON VARIOUS STATE HAZARDOUS SUBSTANCES LISTS, TO THE BEST OF OUR KNOWLEDGE THE PRODUCTS ON THIS MATERIAL SAFETY DATA SHEET CONTAIN NO SUCH SUBSTANCES EXCEPT FOR THOSE SPECIFICALLY LISTED BELOW:

PENNSYLVANIA:

SUBSTANCES ON THE PENNSYLVANIA HAZARDOUS SUBSTANCES LIST PRESENT AT A CONCENTRATION OF 1% OR MORE: NONE KNOWN.

SUBSTANCES ON THE PENNSYLVANIA SPECIAL HAZARDOUS SUBSTANCES LIST PRESENT AT A CONCENTRATION OF 0.01% OR MORE: NONE KNOWN.

CALIFORNIA PROPOSITION 65:

SUBSTANCES KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER: NONE KNOWN.

SUBSTANCES KNOWN TO THE STATE OF CALIFORNIA TO CAUSE BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM: NONE KNOWN.

CANADA:

*THIS PRODUCT HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CFR AND THE MSDS CONTAINS ALL OF THE INFORMATION REQUIRED BY THE CR. NATURAL GRAPHITE AND CRYSTALLINE SILICA ARE CLASSIFIED BY CANADIAN WHMIS AS CLASS D, DIVISION 2, SUBDIVISION A (VERY TOXIC MATERIAL CAUSING OTHER TOXIC EFFECTS).

SECTION 15B
LABELING INFORMATION

| HEALTH   | 0  |
| FLAMMABILITY | 1  |
| REACTIVITY | 0  |
| PPE       | A  |
| #ACUTE    | *CHRONIC |
SECTION 16

MISCELLANEOUS INFORMATION

Reviewed by: Michael Yohn

Issued: 18-October-2012

Supersedes: 01-March-2012

The information set forth herein has been gathered from standard reference materials and/or supplier test data and is, to the best knowledge and belief of Quadrant EPP, accurate and reliable. Such information is offered solely for your consideration, investigation and verification, and it is not suggested or guaranteed that the hazard precautions or procedures mentioned are the only ones, which exist. Quadrant EPP makes no warranties, expressed or implied, with respect to the use of such information or the use of the specific material identified herein in combination with any other material or process, and assumes no responsibility therefor.

* = Information for BG 1326
** = Information for BG 4515
NA = Not applicable
NE = Not established.
> = New or revised information in this section when " > " appears in the left margin.

END OF MSDS