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Mission Specialist Materials Documentation

Pottstown, PA

Document Number	Rev.	Date	Author	Engineering Approval	Quality Approval
ENG-MSS-MATERIALS-001	A	12/01/2020	aeg	JK	aeg



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Revision History

Rev.	Date	Description	Author	Engineering Approval
A	12/01/2020	Initial release (redraft of old document)	Aeg	aeg
B	7/20/2022	Updates, mainly GPS mast	Aeg	aeg
C	7/22/22	Remove GPS spring material, add internal materials	MK	aeg

References

Document	Description

INTRODUCTION

The purpose of this document is to enumerate all materials, and amounts where necessary, used in the mission specialist remotely operated vehicles.



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LIST

1. Stainless Steel
 - a. 18-8
 - b. 304
 - c. 316
 - d. PH17-4
2. High-density polyethylene (HDPE) (King Starboard)
3. Neoprene Rubber
4. Polyurethane (PU)
 - a. Elastomer (Foamed and Solid)
 - b. Rigid Foam
 - c. PolyUrea Float Coating
 - d. Rigid (New thrusters nozzles)
 - e. Potting (Epoxies 20-2621 Clear Urethane Potting)
5. Aluminum 6061
 - a. Anodized Type III (Proprietary sealing process for high pH)
 - b. Anodized Type III
6. Polycarbonate (PC)
7. Polypropylene (PP)
8. Polyvinyl chloride (PVC)
9. Nylon 6/6
10. RENY (50% glass fiber reinforced super nylon MXD6)
11. Potting compounds
 - a. Polybutadiene Rubber
 - b. 20-2621 Urethane potting compound (Poly urethane)
 - c. Epoxy (Loctite E-30 CL, E-90FL E-05CL)
12. Acetal (POM) (Copolymer and Homopolymer)
13. Glass
 - a. Glass Fiber
 - b. Solid Glass BK7
14. Polyethylene terephthalate (PETG)
15. Cyanoacrylate Adhesive (CA)
16. Polytetrafluoroethylene (PTFE) (Internal Wires, Tefgel Anti Corrosion Grease)
 - a. Nitrile Rubber (Orings, 3M 847 adhesive)
17. RTV Silicone Rubber (Cable Water Block)
 - a. PEEK Thermoplastic
 - b. Light Food Grade White Mineral Oil (70ml per thruster)
18. Kingscote 506250-RF4 Red Fluorescent Leak Tracer Dye (8.5mg per thruster)
19. Ceramic Zirconia



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20. Titanium Grade 2

21. Internal materials not normally exposed:

- a. Solder –RoHS with some lead based depending
- b. Fiberglass FR4
- c. Small amounts of gold, silver and tin (pins, plating)
- d. Silicone in ICs
- e. Polystyrene, polyethylene terephthalate (PET) used in capacitors and other components
- f. Quartz crystals