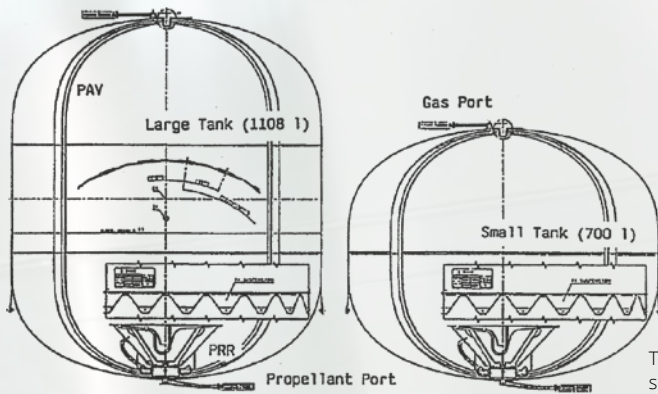


# SURFACE TENSION PROPELLANT TANK OST 22/X

## Surface Tension Propellant Tank OST 22/X

<b>Tank Net Volume Range</b>	700 to 1108 Litres
<b>Propellants</b>	MON respectively MMH
<b>Geometrical Shape</b>	Cassini Domes with variable cylindrical intersections
<b>Maximum Expected Operating Pressure (MEOP)</b>	19.5 bar
<b>Proof Pressure (1.25 x MEOP)</b>	24.38 bar
<b>Burst Pressure (1.5 x MEOP)</b>	29.25 bar
<b>Interface Fixation</b>	24 Suspension Tabs with floating nuts M8 x 1 (e.g.)
<b>Materials</b>	
- Pressure Vessel	Ti6Al4V STA (3.7164.7)
- Suspension/Ports	Ti6Al4V (3.7164.1)
- PMD	Ti99.4 (3.7034.1) and Ti6Al4V (3.7164.1)
- Screens	304L (1.4306); qualified also for Ti99.4 (3.7025.1)
<b>Tank Mass Range</b>	36 to 49 kg
<b>Project Involvement</b>	Artemis, Arabsat 2, CesaSat, Eutelsat W24, Arabsat BSS, Thaicom 3, Sinosat, Sirius



Tank family with standardized PMD's



## Functional Performances

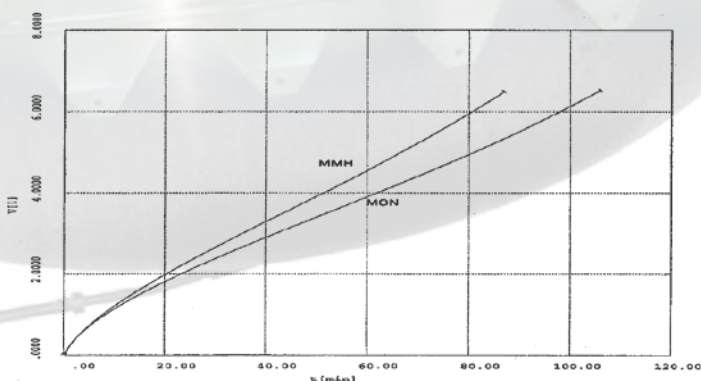
The tank is qualified for a hypergolic bipropellant propulsion subsystem with a liquid apogee boost motor of 400 N and orbit and attitude control thrusters up to 22 N force. The pressurant gas bubble free expulsion of the propellant under micro-g conditions will be performed by a specific propellant management device (PMD). The PMD contributes in 4 propellant acquisition vanes (PAV) and a propellant refillable reservoir (PRR). The PRR realize propellant expulsion despite of variable disturbance accelerations w.r.t. direction and level. Within in micro-g phases in between the orbit control manoeuvres the PRR will be refilled with propellant out of the propellant tank automatically via the PAV's.

These tanks are for unified propulsion subsystems of geo-stationary Satellites which transfer themselves from the transfer orbit into the geostationary circular orbit and perform there orbit and attitude control manoeuvres.

### Structure Layout Parameter

- Max. Operation Pressure: 19.50 bar (SF=1.5)
- Design Burst Pressure: 29.25 bar
- Quasi Static Loads: axial 10.5 g lateral 4.0 g

Applicable Launchers: Ariane 4 & 5, Proton, Long March, Delta



Refill Time characteristic of the PRR under "zero"-g conditions