

PRODUCT BROCHURE

10 KL Cryogenic Liquid oxygen Vertical Storage Tank

Model Number: CRYO-10KL-V-Oxygen

Item Name

10 KL Cryogenic Liquid Oxygen Vertical Storage Tank



Model Number Details:
CRYO-10KL-V-Oxygen



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Major Parameters:

Neometrix Product Specifications

CRYO-10KL-V-Oxygen

CRYO-10KL-V-Oxygen, Cryogenic vertical storage tank is used to store and use liquid Oxygen. Product Specifications:

- Product: Cryogenic Vertical Storage Tank
- **Capacity: 10KL (Tolerance: +/- 1KL)**
- Quantity: 1No.
- Application: Storage & use of Liquid Oxygen for semiconductor processing.
- Design and Manufacturing Code: EN13458-2:2002 / ASME Section VIII Division 1/EN13458-2+Annex "C".
- Material of Construction: Inner vessel: Stainless steel X5 CrNi 18-10/1.4301-EN10028-7/SA240 type 304 outer vessel: Carbon steel/S355J2.
- Maximum Allowable Working Pressure: 17bar, outer vessel operating Pressure: Vacuum.
- Design Temperature: Inner Vessel: -196 to + 40 Deg. C, outer vessel: -20 to + 55 Deg. C.

Neometrix Engineering Private Limited

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GSTN: 09AACCN2254N1Z6, CIN No.: U29120DL2005PTC141114



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- Cleaning & Degreasing: Inner pressure vessel, piping and valves shall be cleaned and degreased for Oxygen Service.
- Inspection: Third party inspection & certification.
- NER % / Day for Liquid Oxygen application: **≤0.45% / Day**
- Thermal Insulation: Perlite+ Vacuum.
- Annulus Vacuum (Warm): ≤100Microns.
- Tank shall have a dual safety valves and dual burst discs. Also, shall have a valve, safety relief selector.
- Tank shall have long stem globe valves suitable for cryogenic applications as per industry standard.
- Piping: All piping shall be of stainless steel suitable for cryogenic applications as per industry standard.
- Pressure building coil shall have isolation valves and line safety valve.
- Tank should have liquid analysis connection.
- Tank shall have tank annular space vacuum detection / vacuum sensor / vacuum measuring probe (Vacuum isolation valve and vacuum thermocouple connection) and etc as per industry standard. The tank shall have
 - o Valve, vacuum gauge tube to isolate vacuum gauge.



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- o Valve, evacuation –connection to evacuate annular space between inner and outer vessel.
- o Vacuum Readout, outer vessel- connection to read vacuum level in tank.
- o Pressure safety element, outer vessel –Annular space rupture disc to protect outer vessel from over-pressurization.
 - Tank shall have Economizer isolation valves.
 - Tank shall have filling assembly with check valve and purge valve as an industry standard.
 - Footprint template: Footprint drawing should be made available to SITAR immediately upon receipt of purchase order for making foundation work at site.
 - Tank should have P&ID.
 - Tank shall have PESO approval and certification.

Tank shall have minimum following basic features:

- Bottom filling valves
- Top filling valves
- Line safety valve
- Filling connection



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- Inner vessel safety valves
- Inner vessel protection device
- 3-way valve
- Pressure indicator
- Level indicator
- Level gauge manifold ,liquid
- Level gauge manifold, equalizer
- Level gauge manifold, gas
- Full try cock valve
- Lift plate
- Vacuum connection
- Withdrawal valve – Liquid + Connection
- Pressure Regulator / Economizer with filter
- Check valve



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- Pressure building coil
- Vent valve
- Vacuum probe isolation valve
- Thermal safety valve , Fill
- Thermal safety valve, Pressure Building Circuit

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LIQUID OXYGEN Storage Vessel – 20000 L



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Standards followed:

Liquid Oxygen Vessel:

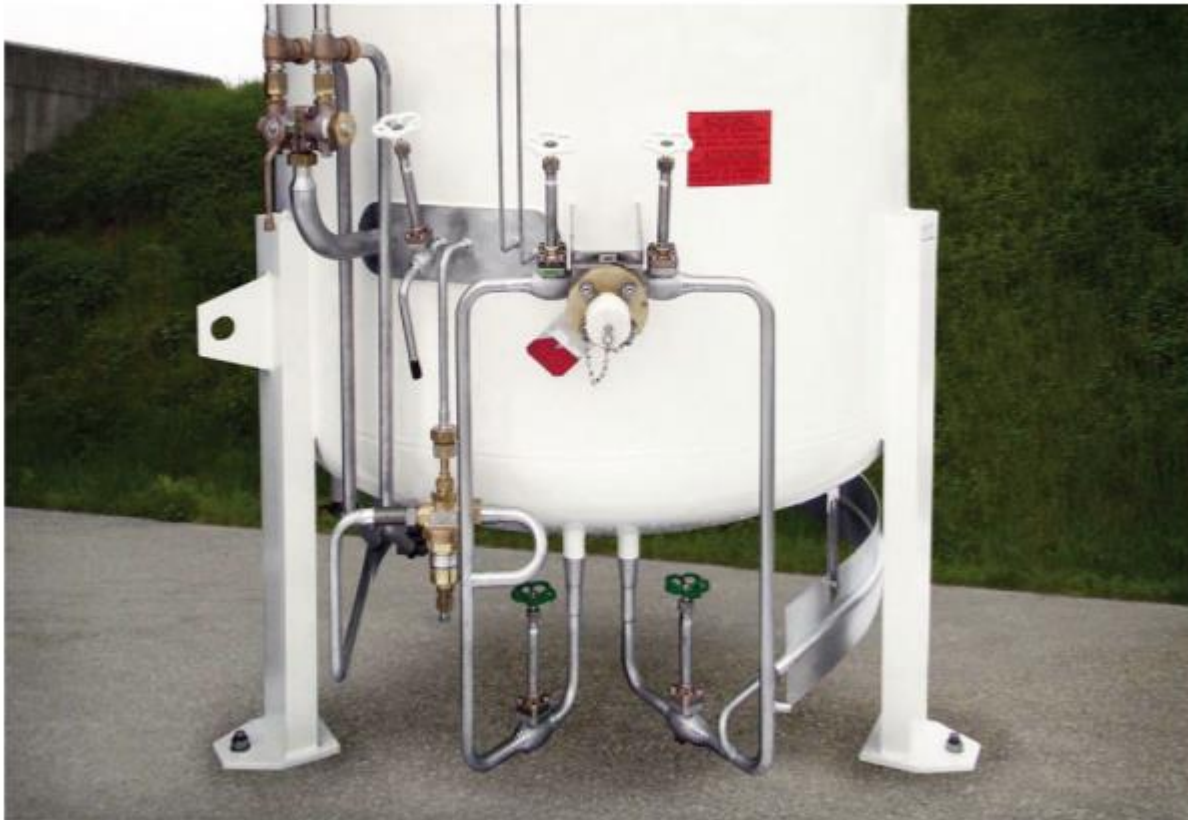
- Design Code:
 - EN-13458 Annexure “C” (Cold Stretching)
 - ASME Section VIII + Appendix 44 + SMPV (U) Rules 1981 with all amendments (up to date)
- Material of Construction:
 - Inner Vessel: Austenitic Stainless Steel (SS-304)/ X5 Cr Ni 18-10
 - Outer Vessel: carbon Steel
- Vacuum: Perlite with high Vacuum Annular Space
- Pipe Work: Stainless steel pipe work, detachable assembly through Flanged or Union Joints and Pressure Building Coil (star finned).
- Valves (Inlet/Outlet): Cryogenic Valve on Liquid Lines EXTENDED Spindle Type of Bestobell Valves UK/ Mack Cryo/ HEROSE Germany
- Pressurizing & Full Try Cock: 20 NB/ 15 NB (extended spindle type)
- Safety Relief Valve: 2 Nos.
 - Comes with Diverter Ball Valve Make: FAINGER LESER/ BRIGHTTECH
- Bursting Disc: 1 No. Safety Bursting Disc for inner vessel. Make: BS &B Safety System (FMC Sanmar Group).

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- Tank will be fitted with the followings:



- Tank Inlet, Outlet with Cryogenic Valves
- Connection to Vapourizer
- Pressurizing Coil with Pressure Build Up Valve
- Full Try Cock Valve
- Liquid Level Indicator (DP Type) from General instruments
- Pressure Gauge

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- Safety Relief valve – 2 Nos.
- Rupture Disc for Inner Vessel and Safety Disc for Jacket
- Vacuum Valve



- Inspection: CCOE Approved 3rd party Inspection Agency like M/s Baxcounsel Inspection Bureau (P) Ltd.

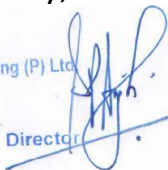
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Kindly feel free to contact us for any further details/ clarifications.

Yours Faithfully,

For Neometrix Engineering (P) Ltd

Director

Shailendra Pratap Singh
CEO & Director