

# PSA System & Cryogenic System Comparison

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Items	Cryogenic Oxygen System	PSA Oxygen System
Process flow	Complicated flow	Easy flow
Technological reliability	Comparative maturity	Comparative maturity
Operational	More difficult, long starting time	Easy Operation, Start & Stop freely
Purity	O2 Purity 99.6%	O2 Purity 93%±2%
Products output	Can produce O2/N2/Argon multiple	Oxygen Only
Degree of automation	Complicated Adjustment	Easy adjustment
Safety	Low temperature, there is a certain danger of explosion	Run at room temperature under low pressure, no unsafe factors
Operator degree of adaptation	The operatives need long professional and technical training	Operatives can work on duty only after shorter time training.
Plant requirements	High Quality & More land required	Standard Quality & Less land required
Investment in civil engineering	One-time investment much more	One-time investment very few
Maintenance costs	Much more	Very few
O2 Unit Power consumption	2.2-2.4 kw.h/ Nm3O2	1.4-1.8 kw.h/Nm3O2
Produce Oxygen Costs	Higher	Lower
sphere of application	High purity requirements and continuous operation of the unit	Low purity requirements and intermittent operation units

## KDO-50P Cryogenic Oxygen System & NTK-50P PSA Oxygen System

Item	KDO-50P	NTK-50P
O2 Capacity & Purity	50 Nm3 / h, Purity 99.6%	50 Nm3 / h, Purity 93%
N2 Capacity & Purity	50 Nm3 / h, Purity 99.99%	Cannot produce N2 at same plant
O2 production costs	kw.h/ Nm3 O2	kw.h/ Nm3O2
USD/Nm3O2	Around 0.48 USD ( if 0.2 USD/unit )	Around 0.36 USD ( if 0.2USD/unit )
Operator workers	6-8 Persons	1-2 Persons
ZMS replacement period	8-10 years	8-10 years