

APT INDUSTRIAL CHILLER

INDUSTRIAL COOLING
REFERENCE DOCUMENT

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90HP Explosion-Proof Chiller for Chemical Reactor Cooling

Industrial Cooling Reference for Solvent-Based
Chemical Process Cooling

EXPLOSION-PROOF

90HP REFERENCE

CHEMICAL PROCESS

REACTOR COOLING

CASE REFERENCE

Project Snapshot

90HP explosion-proof chiller direction for a chemical reactor cooling project.

APPLICATION Chemical Reactor Cooling	INDUSTRY Chemical Processing Facility
COOLING TARGET Solvent-based reactor cooling and process temperature control	CHILLER DIRECTION 90HP Explosion-Proof Industrial Chiller
REVIEW FOCUS Hazardous-area classification, heat load, solvent type, material compatibility, flow rate, electrical standard	



90HP EXPLOSION-PROOF CHILLER REFERENCE

ENGINEERING REVIEW

Engineering Matrix

ENGINEERING ITEM	WHY IT MATTERS	DATA TO CONFIRM
Hazardous-Area Classification	Protection direction depends on the site risk zone and applicable standard.	Area classification, gas group, and local compliance requirement.
Heat Load	Reactor duty determines whether 90HP is suitable as reference direction.	Continuous and peak cooling demand from the reactor and support system.
Solvent Type	Process fluid characteristics affect material compatibility and safety review.	Solvent name, composition, flash point, and contamination consideration.
Target Temperature	Reactor control accuracy influences product consistency and process stability.	Required setpoint and allowable fluctuation.
Flow Rate	Enough circulation must be maintained through the reactor cooling jacket or loop.	Required L/min or m3/h through the process circuit.
Electrical Standard	Explosion-proof electrical direction must match destination standard and code.	Voltage, frequency, standard, and installation rule.
Material Compatibility	Wetted parts must be reviewed for solvent and process-side compatibility.	Required materials for circuit, exchanger, seals, and piping.

Reference direction only. Final engineering review should be completed before quotation and final model confirmation.

COOLING CHALLENGE

Process Review

- Chemical reactor temperature control must remain stable during solvent-based process operation.
- Hazardous-area classification affects cabinet layout, electrical review, and protection direction.
- Heat exchanger material compatibility must be reviewed against solvent type and plant requirement.
- Flow rate and pump pressure must match the real reactor cooling circuit resistance.

RECOMMENDED DIRECTION

A 90HP explosion-proof industrial chiller was considered as the preliminary direction for this chemical reactor cooling project. Final explosion-proof configuration depends on site classification, applicable standard, local code, and final engineering review, together with heat load, solvent type, target temperature, flow rate, and electrical requirement.

90HP Explosion-Proof Chiller Configuration

Main configuration points for a chemical reactor cooling reference project.



01	Hazardous-Area Review Cabinet protection direction depends on site classification and applicable standard.
02	Industrial Compressor Continuous-duty refrigeration system for chemical process cooling reference.
03	Heat Exchanger Material Material review follows solvent compatibility and corrosion risk.
04	Control and Protection Electrical logic and project review support safe industrial operation direction.

TECHNICAL REFERENCE

COOLING METHOD Air cooled or project-reviewed industrial process cooling	CAPACITY DIRECTION 90HP reference	TYPICAL APPLICATION Chemical reactor / solvent process / hazardous-area cooling review	COOLING CIRCUIT Closed-loop process water or reviewed secondary loop
OUTLET TEMP. Project-defined, often 5-25 C	PUMP SELECTION By required flow and head	POWER SUPPLY 380-460V, 50/60Hz by destination	FINAL REVIEW Hazardous area / heat load / solvent / electrical standard

Review Note

Final explosion-proof configuration depends on site classification, applicable standard, local code, and final engineering review. Final component selection should also be confirmed according to heat load, target temperature, solvent type, material compatibility, flow rate, and installation layout.

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sales@applied-chiller.com

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