

**INVITATION TO BID NO. 15002551 AO/MP
PROJECT MP/ROM/06/005**

TECHNICAL SPECIFICATIONS

**FOR THE PURCHASE AND SUPPLY OF REFRIGERATION
EQUIPMENT
TO PHASE OUT THE CTC IN THE PRODUCTION OF
DI(2-ETHYLHEXYL) PEROXYDICARBONATE (DEHPC) AT
OLTCHIM S.A., ROMANIA.**

1. AIM OF THE PROJECT

The project is designed to phase out CTC at the DEHPC production of Oltchim S.A. Romania. DEHPC is used in CTC solution as a catalyst. The project will phase out the use of 120.45 ODP MT of Carbon tetrachloride (CTC) at Oltchim S.A. Ramniczu Valcea, Romania.

2. ENTERPRISE BACKGROUND

Oltchim S.A. is one of the largest basic material manufacturer and petrochemical companies in Romania. Owned 95% by the state Oltchim manufactures chlorinated products from chlorine and petrochemicals.

3. MATERIALS USED IN THE EQUIPMENT

The refrigeration media shall not have an ozone depleting potential (no Ozone Depleting Substances). If the ODP of the material used in the refrigerator advice is not zero, the offer will be rejected. The Global Warming Potential (GWP) of the media shall be smaller than 150 according to the advice of the EU Commission.

4. SPECIFICATION OF SCOPE OF EQUIPMENT AND SERVICE

The Technical Specifications shall be used for the purchase and supply of equipment to produce DEHPC at Oltchim S.A. Romania in order to phase out the CTC. This document specifies the scope of supply of goods.

The Contractor shall inform UNIDO in its bid on the origin of equipment as well as the ODP and GWP of the refrigeration media used..

Pressure equipment shall be certified according to EU legislation (DIN 28063:1999).

Also the Contractor shall transfer clear proofs together with its bid that it can comply with the requirements of the certificates and documents in the list as follows:

- CE Certification, Marking and Declaration of Conformity to the EEC directives as follows: Pressure equipment directive: 97/23/EC, Dangerous substances and explosive atmospheres regulations;
- Machinery (98/37/EC);
ATEX Directive (94/9/EC: ATEX II 3G);
- Code Mechanical design calculations.

The Contractor shall transfer together with its BID:

- Spare part list for commissioning and 1 year together with the prices.
- Drawings of equipment needed for erection: main dimensions/weights, nozzle details/dimensions, allowable loads and weight.

The Contractor shall transfer - within maximum 4 weeks from the contract awarding - the detailed drawings of the equipment, to be used for civil works and mechanical detailed design engineering

The Contractor shall attach documents together with the equipment when transported to Oltchim

- Inspection and testing plan to be used after the equipment installed and operating
- Installation, maintenance and operation manual for the equipment
- Packing and preservation procedure for the equipment

- Surface cleaning and preparation procedure for the equipment
- If the equipment is under PED requirements, to be included are also the general assembly drawing with the main design parameters (temperature, pressure, working fluid), and also the detailed design of the equipment manufacturing, and the drawing for the name plate
- Conformity statement of the manufacturer and CE stamp on the nameplate

Further details of the equipment are given in Annex 1.

5. SERVICE

The Contractor shall provide clear evidence with the bid of its ability to ensure the completeness of its service ability.

Price given in the bid shall cover:

- cost of equipment including cost of documentations
- service manuals and operating manuals
- packing and transportation cost, included also the transport insurance, according to INCOTERM 2000, DDU Ramnicu Valcea, Romania
- cost of spare parts.
- Cost of refrigeration media for the first filling (not the ethylene glycol!)

6. ELECTRICITY SUPPLY

220/380 V, 50 Hz

The other utilities available at Oltchim site and needed for the equipment offered by the contractor can be seen in the Annex 2.

7. TIME SCHEDULE

Equipment shall be delivered up to 4 months after the placement of the Purchase Order.

8. SCOPE OF SUPPLY

The Technical Specifications deal with the procurement of the three industrial refrigerators. However, instead of the three refrigerators the Contractor could offer one or two refrigerators only, which can provide different cooling temperatures at three independent levels given in the Annex.

The supplier shall provide complete lists of spare parts for the equipment together with their prices and delivery periods, including those provided by sub-suppliers. The price of these spare parts shall include labeling and packaging for preservation for a period of one (1) year in the destination country based on the agreed Incoterm DDU Ramnicu Valcea Republic of Romania.

9. SERVICES FOR INSTALLATION, COMMISSIONING, TRIAL RUNS AND START-UP

Installation will be performed by local companies, which will be involved in commissioning, trial runs and start-up. Installation and commissioning costs should not be included in the supplier's offer only if contractor considers it essential.

10. CERTIFICATES

The Contractor shall provide certificates, which shall clearly state how they refer to the identified part of equipment.

11. WARRANTY

EXTENT OF THE WARRANTY

The Contractor warrants that the equipment is in accordance with all the requirements of the Technical Specifications, new, of first quality, of tested design, safe and fit for purpose and use for which it is intended under the Technical Specifications.

WARRANTY PERIOD

The equipment or any part of it is warranted for a minimum period of 24 months from the date of receipt at Oltchim’s stores of the equipment or 18 months from the date of commissioning, whichever ever is later.

Table of Scope of Supply

UNIDO ITB No. 15002551 AO/MP MP/ROM/06/005						
UNIDO REQUIREMENTS		TO BE COMPLETED BY THE INVITEE				
Item	Name and required parameters	Qty.	Unit price	Total item price	Compliance	Remarks**)
			US\$	US\$	yes/no	
	I. Equipment, parts, supplies					
1	Refrigeration unit(s) for cooling intermediate agent(s) which can provide 90 kW cooling energy at-18 °C level, 7 kW cooling energy at -10 °C level and 15kW cooling energy at 0°C level.	1				One or two refrigerators can be recommended instead of the one
	Sub-total:					
	II. Transportation costs DDU Ramnicu Valcea					
	Total price DDU Ramnicu Valcea, ROMANIA					

Annex 1. DETAILED REQUIREMENTS FOR THE EQUIPMENT TO BE SUPPLIED

TECHNICAL SPECIFICATION NO. AR 1

1. Object:	Refrigeration unit for cooling an intermediate agent
2. Unit number	1 piece
3. Technical characteristics	
3.1. Unit refrigeration capacity	90 kW
3.2. Refrigeration agent	ecologic freon
3.3. Intermediate agent	ethylene glycol solution in water $\xi = 50 \%$
3.4. Temperature of the intermediate agent	
a) at unit inlet	- 11 °C
b) at unit outlet	- 18 °C
3.5. Automatic capacity control	yes
3.6. Condensation is performed with recycled cooling water	
3.7. Maximum permissible noise level	
at 1000 Hz and 1 m distance from the unit	85 dB
3.8. Operation time	8000 h/year

NOTE

- We request an inquiry for compact units, completely equipped with compressor, evaporator, etc., automation unit included

TECHNICAL SPECIFICATION NO. AR 2

1. Object:	Refrigeration unit for cooling an intermediate agent
2. Unit number	1 piece
3. Technical characteristics	
3.1. Unit refrigeration capacity	7 kW
3.2. Refrigeration agent	ecologic freon
3.3. Intermediate agent	ethylene glycol solution in water $\xi = 38 \%$
3.4. Temperature of the intermediate agent	
a) at unit inlet	- 7 °C
b) at unit outlet	- 10 °C
3.5. Automatic capacity control	yes
3.6. Condensation is performed with recycled cooling water	
3.7. Maximum permissible noise level	
at 1000 Hz and 1 m distance from the unit	85 dB
3.8. Operation time	8000 h/year

NOTE

- We request an inquiry for compact units, completely equipped with compressor, evaporator, etc., automation unit included

TECHNICAL SPECIFICATION NO. AR 3

1. Object:	Refrigeration unit for cooling an intermediate agent
2. Unit number	1 piece
3. Technical characteristics	
3.1. Unit refrigeration capacity	15 kW
3.2. Refrigeration agent	ecologic freon
3.3. Intermediate agent	ethylene glycol solution in water $\xi = 28 \%$
3.4. Temperature of the intermediate agent	
a) at unit inlet	+ 3 °C
b) at unit outlet	0 °C
3.5. Automatic capacity control	yes
3.6. Condensation is performed with recycled cooling water	
3.7. Maximum permissible noise level	
at 1000 Hz and 1 m distance from the unit	85 dB
3.8. Operation time	8000 h/year

NOTE

- We request an inquiry for compact units, completely equipped with compressor, evaporator, etc., automation unit included

Annex 2. Local condition at Oltchim S. A.

Available utilities

1. Electric power	220/380 V, 50 Hz
2. Recycled cooling water	
a) inlet/outlet temperature	28/34 °C
b) inlet pressure	max. 6 bar
c) permissible pressure loss	max. 1 bar
3. Instrument air	
a) pressure	3 – 5 bar
b) dew point	- 40 °C

Location conditions : in closed hall, without special dust and humidity conditions, normal environment, temperature max. + 37°C.