



## **INVITATION TO BID**

**Framework agreement for delivery of ion resin for ETBE synthesis  
for tubular reactors R-1A&B and for tank reactors R-2A&B  
for 2025-2027**

## INTRODUCTION

ORLEN S.A. (further ORLEN) invites suppliers whose product meets the technical requirements to submit a proposal for delivery of ion resin for ETBE synthesis under three-year framework agreement.

### REQUIREMENTS ( 0/1/that must be strictly fulfilled)

1. The offered resin with the quantity and technical specification
2. Required quantities and delivery dates on DDP/DAP Płock:

		quantity to be delivered (L)	2025	2026	2027
Tubular reactors	R1A	3 000	15.12.2025	14.12.2026	13.12.2027*
	R1B	3 000	15.12.2025	14.12.2026	13.12.2027*
Tank reactors	R2A	15 000	n/a	n/a	10.05.2027*
	R2B	n/a	n/a	n/a	n/a

\*deliveries in 2027 depends on start-up of the new unit EETB in ORLEN S.A.

3. Guarantee of the required delivery date
4. The technical specification should contain data confirming that the following requirements for selected parameters are met (table 4.1. and 4.2.):

#### 4.1. For R-1A/B

REQUIREMENTS	UNIT	VALUE
Total exchange capacity (H <sup>+</sup> form), min.	val/kg	5,2
Moisture holding capacity, max.	%	57
Harmonic mean size	mm	0,6 – 1,2
Fines contents <0,4 mm, max.	%	1,5

#### 4.2. For R-2A/B

REQUIREMENTS	UNIT	VALUE
Total exchange capacity (H <sup>+</sup> form), min.	val/kg	4,7
Moisture holding capacity, max.	%	57
Harmonic mean size	mm	0,5 – 1,0
Fines contents <0,4 mm, max.	%	1,5

5. Confirmation the resin offered is suitable for the production of ETBE.
6. MSDS in Polish and English language, TDS and REACH compliancy statement
7. Country of origin

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8. Custom tariff code
9. Guarantees and liabilities for:
  - 9.1. Guaranteed minimum required resin life at the Ether Unit:
    - 9.1.1. for R-1A/B reactors – min 10 months with feed capacity of 13 t/h of C4 fraction in a particular reactor
    - 9.1.2. for R-2A/B reactors – min 36 months with feed capacity of 28,2 t/h of C4 fraction in a particular reactor.
  - 9.2. Guaranteed conversion of isobutylene at the end of resin work cycle:
    - 9.2.1. for R-1A/B reactors: min 85%
    - 9.2.2. for R-2A/B reactors: min 40%

The content of isobutylene in the C4 fraction at the inlet to the R-1A/B reactors is from 20 to 60% m/m (average 36% m/m), for R-2A/B reactors from 1,5 to 15% m/m ( average 4,5% m/m).

10. Packaging:
  - 10.1. Resin for R-1A/B reactors – packed in 1m<sup>3</sup> big-bags, with the possibility of unloading from the bottom (diameter of the unloading sleeve 20-35 cm)
  - 10.2. Resin for R-2A/B reactors – packed in 1m<sup>3</sup> big-bags, with the possibility of unloading from the bottom (diameter of the unloading sleeve 20-35 cm)
11. Technical support included in the price of the offered products - minimum e-mail contact (please appoint a contact person), in order to maintain the highest degree of conversion for the longest working time of individual ion exchange resins
12. Please advise the values of the maximum recommended levels of poisons, contaminations for the fraction poisoning the catalyst
13. Storage instruction and shelf-life
14. References of resin application.

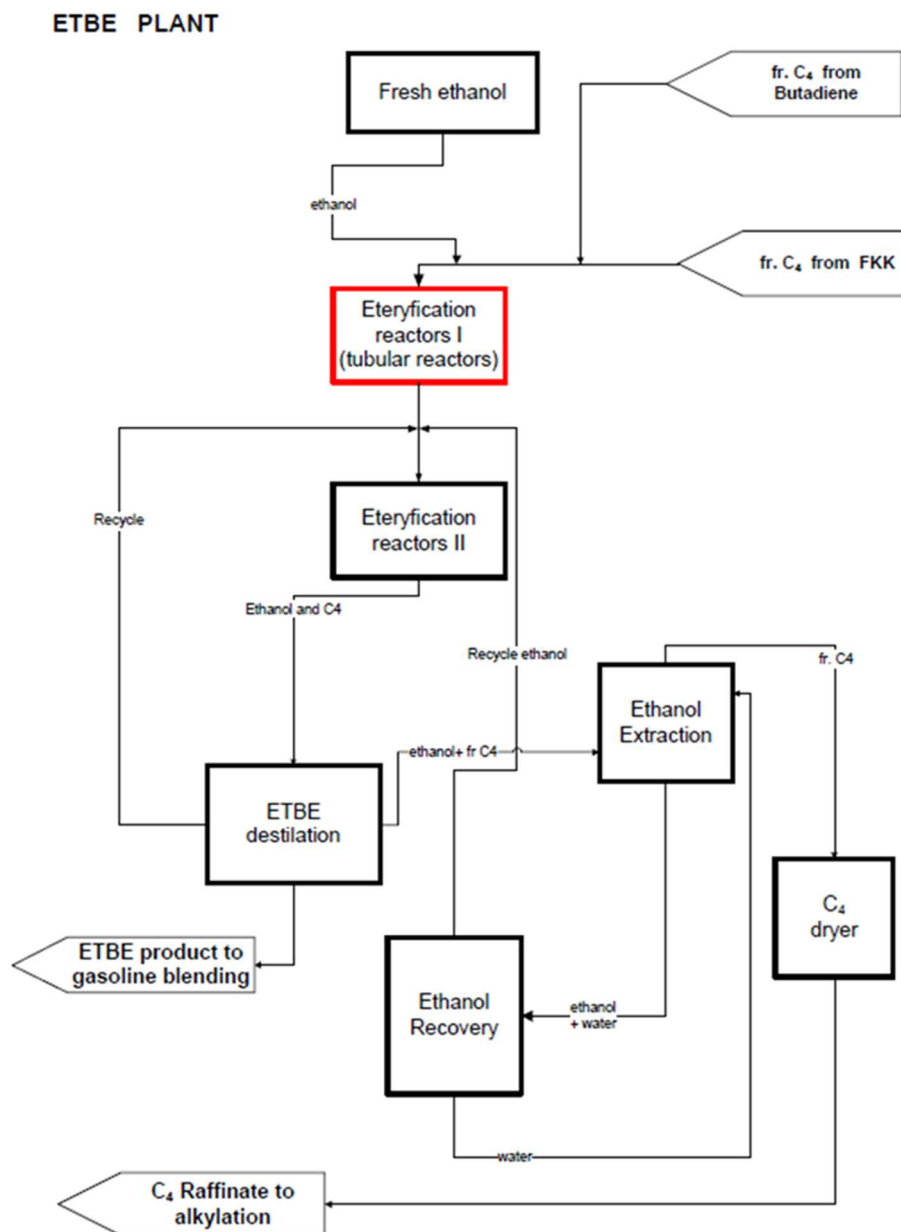
**In the case of non-fulfilment any of the above criteria offer will not be further considered. Final evaluation will be the result of combination of technical and economical evaluation.**

## **ASSUMPTIONS**

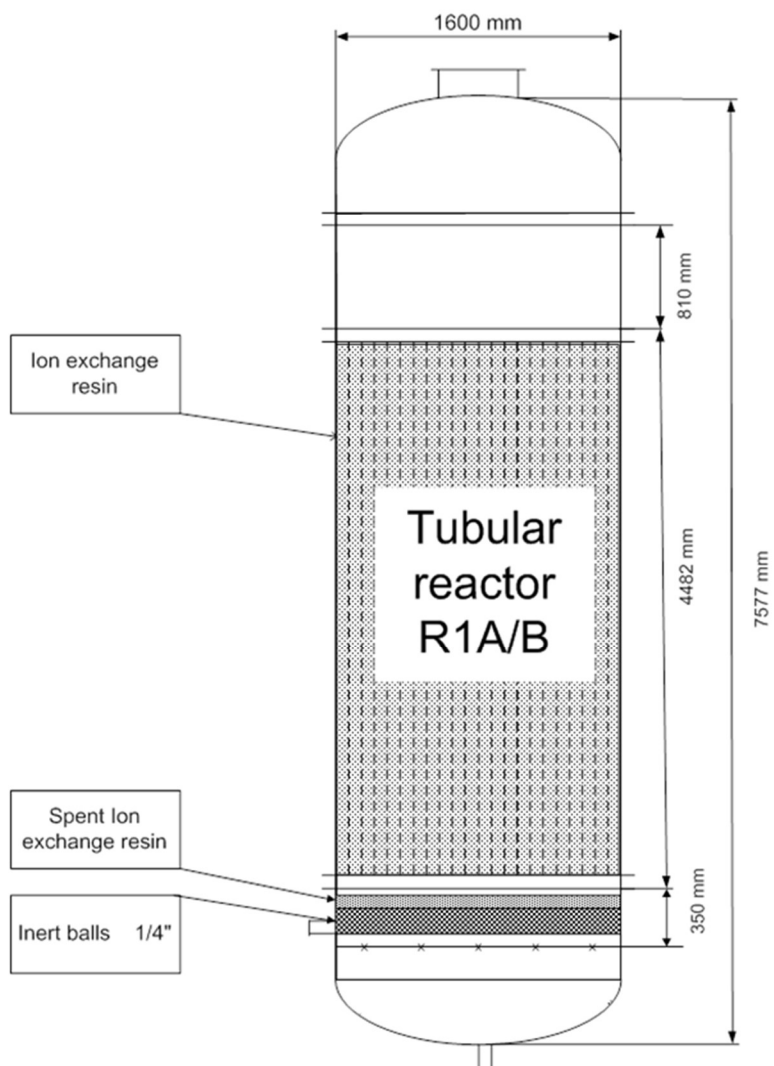
1. Yearly average Feed fractions from FCC & Butadiene Units after concentration plus mixed feed for Ether Unit.

C4 from butadien	min	max	C4 from FKKII	min	max	C4 average (feed EETB)	min	max
METAN %wag.	0,01	0,04	Gęstość [kg/m3] w temp. 15 °C	575,70	584,30	PROPAN [%wag.]	0,01	2,64
ETAN %wag.	0,01	0,27	PROPAN [%m/m]	0,01	5,23	PROPYLEN [%wag.]	0,01	2,83
ETYLEN %wag.	0,01	0,01	PROPYLEN [%m/m]	0,01	10,36	I-BUTAN [%wag.]	4,94	70,95
ETAN+ETYLEN [%wag.]	0,00	0,00	I-BUTAN [%m/m]	34,15	61,41	BUTAN [%wag.]	0,15	11,11
PROPAN %wag.	0,01	9,91	BUTAN [%m/m]	0,07	9,32	BUTEN-1 [%wag.]	14,03	33,79
PROPYLEN %wag.	0,01	0,67	BUTEN-1 [%m/m]	13,63	27,01	IZOBUTYLEN [%wag.]	4,39	58,58
CYKLOPROPAN %wag.	0,01	0,11	IZOBUTYLEN [%m/m]	20,95	31,60	BUTEN-2 TRANS [%wag.]	0,01	12,48
PROPADIEN %wag.	0,01	0,34	BUTEN-2 TRANS [%m/m]	0,03	10,43	BUTEN-2 CIS [%wag.]	0,01	10,15
METYLOACETYLEN %wag.	0,01	0,25	BUTEN-2 CIS [%m/m]	0,01	3,72	BUTADIEN-1,3 [%wag.]	0,01	0,77
I-BUTAN %wag.	5,40	77,20	BUTADIEN-1,3 [%m/m]	0,31	0,65	BUTADIEN-1,2 [%wag.]	0,01	0,09
BUTAN %wag.	0,01	19,32	I-PENTAN [%m/m]	0,01	0,05	ETYLOACETYLEN [%wag.]	0,01	0,11
BUTEN-1 %wag.	7,77	34,65	węglowodory C5+ [%m/m]	0,01	0,37	PROPADIEN [%wag.]	0,01	0,08
IZOBUTYLEN %wag.	14,66	65,09	ETAN [%m/m]	0,00	0,00	Zaw. wody [%m/m]	0,01	0,01
BUTEN-2 TRANS %wag.	0,01	8,91	Zaw. siarki całkowitej [ppm m/m]	5,10	38,00	Gęstość [kg/m3] w temp. 15 °C	574,00	600,10
BUTEN-2 CIS %wag.	0,01	3,76	Zaw. siarki całkowitej [mg/kg]	0,40	44,40	metyloacetylen [%m/m]	0,01	0,04
BUTADIEN-1,3 %wag.	0,01	2,87	Suma C3 [%m/m]	0,24	8,20	cyklopropan [%m/m]	0,01	0,05
BUTADIEN-1,2 %wag.	0,01	0,25				3-metylo-1-buten (izopenten) [%m/m]	0,01	0,07
ETYLOACETYLEN %wag.	0,01	0,10				Zaw. siarki całkowitej [ppm m/m]	46,00	46,00
WINYLOACETYLEN %wag.	0,01	0,17				Węglowodory C5 [%wag.]	0,01	0,08
I-PENTAN %wag.	0,01	0,13						
PENTAN [%wag.]	0,00	0,00						
3-METYLO-1-BUTEN %wag.	0,01	0,01						
Węglowodory C5+ %wag.	0,01	0,12						
Gęstość [kg/m3] w temp. 15 °C	570,20	599,20						
zaw. wody [--]	0,00	0,00						
Zaw. siarki całkowitej [ppm m/m]	1,00	1,00						
zaw. węglowodorów C3 [%m/m]	0,00	9,91						

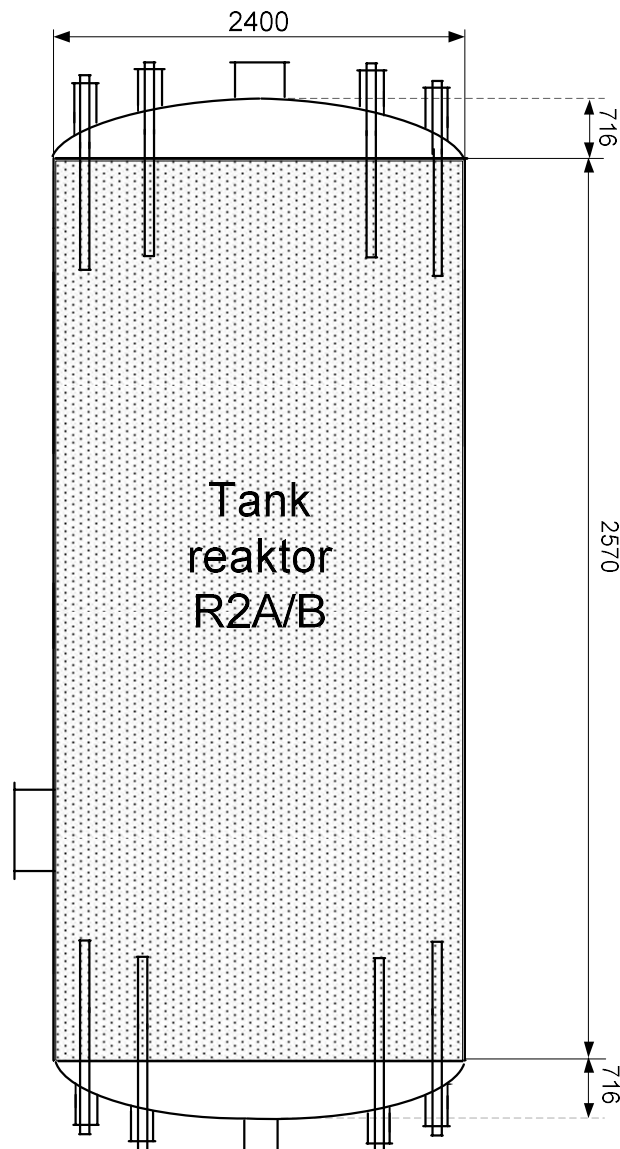
## 2. ETBE UNIT block drawing.



### 3. Reactor R1A/B drawing



## 4. Reactor R2A/B drawing

**DELIVERY CONDITIONS**

1. Quantity: 18 000 liters and 15 000 liters based on the Purchase Orders to the framework contract.
2. Way of packing: big-bags with the possibility of unloading from the bottom.
3. Place of delivery: DDP Płock, 09-411, Poland.
4. Dates of deliveries:
 

a. 1 <sup>st</sup> delivery	6 000l for R-1A&B	15 <sup>th</sup> of December, 2025
b. 2 <sup>nd</sup> delivery	6 000l for R-1A&B	14 <sup>th</sup> of December, 2026
c. 3 <sup>rd</sup> delivery	15 000l for R-2A	10 <sup>th</sup> of May, 2027
d. 4 <sup>th</sup> delivery	6 000l for R-1A&B	12 <sup>st</sup> of December, 2027

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## MINIMUM REQUIRED SCOPE OF BID

### **Technical part should contain:**

1. Confirmation of the all requirements listed above.
2. Physical and chemical characteristic of the offered product – please attach all necessary documents such as Specification, MSDS, REACH etc.
3. All required guarantees.
4. References of resin application.
5. Country of origin.
6. Lead time.
7. Terms of guarantee.
8. Packing type (big-bags with possibility of unloading from the bottom).
9. Delivery time.

### **Commercial part should contain:**

1. Quantity in liters of the resin.
2. Unit price per liter of the product delivered on the following basis acc. to INCOTERMS 2020; DDP ORLEN S.A., Płock, Poland and FCA Seller's warehouse (please present detailed address of the warehouse with area code number).
3. The total value of the presented offer on the following basis acc. to INCOTERMS 2020; DDP ORLEN S.A., Płock, Poland and FCA Seller's warehouse (please present detailed address of the warehouse with area code number).
4. Payment terms.
5. Country of origin.
6. Copy of current insurance policy
7. Customs tariff number.
8. Packaging: the number of big bags and the weight of packaging.
9. Gross weight and dimension of the goods.
10. Statement that you familiarized yourself with and accept this enquiry conditions.

Your offer will be evaluated in the aforesaid technical and commercial conditions.

In case of order, General Terms of Purchase of Commodities and the Terms of Purchase of Commodities and Rendering of Services Devised by ORLEN S.A. OWZ Rev. III/2012 06.12.2012 shall apply (available on our website [www.orlden.pl](http://www.orlden.pl)).

ORLEN S.A. reserves the right to select at its own option a winning bidder, winning bidders or other persons, and negotiate with them a part or entirety of the submitted bids and to conclude agreements with more than one bidder selected through negotiations, where the scope of a given agreement can cover the entirety or a part of works.

Moreover ORLEN S.A. reserves the right to cancel this invitation for tenders and withdraw from negotiations without giving any reason. Bidders are not eligible for any claims against the Inviting Party in this connection.

ORLEN S.A. reserves the right not to issue the references without giving any reason.

In case of Purchase Order/Contract the confirmation of the agreed terms of cooperation on behalf of ORLEN S.A. can be only issued by the person with the appropriate power of attorney.

A potential contract will be concluded upon signing by both parties.

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Best regards,

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ORLEN Spółka Akcyjna, a Polish company, with its registered office at Chemików 7, 09-411 Płock, Poland  
entered into the Register of Entrepreneurs kept by the District Court for Łódź Śródmieście in Łódź, XX Commercial Division of the National Court Register under the number KRS 28860 NIP: 774-00-01-454, BDO 000007103, share capital/paid up capital: 1 451 177 561,25 PLN

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ORLEN. NAPĘDZAMY PRZYSZŁOŚĆ.