

PRICE AGREEMENT

This **AGREEMENT** is made between **Nitroma** and **DEdwardsCorp plc.** on **12/03/2021**. It confirms the mutually agreed upon prices of raw materials, catalysts, products, utilities and labour.

Location: The plant is located in Nanjing, Jiangsu in China.

Lifetime: The plant will operate for at least 20 years.

Operation: In Year 1, the plant will operate for 275/365 days. This may increase in future years.

Capacity: In Year 1, the plant will operate for 35 days to produce *o*-toluidine (OTOL) and *p*-aminobenzoic acid (PABA) and 240 days to produce *o*-toluidine (OTOL) and *p*-aminobenzaldehyde (PABH). 25 days are dedicated for maintenance, start up and shutdown. In total, 652 tonnes/year OTOL, 538 tonnes/year of PABH and 100 tonnes/year of PABA will be manufactured. The capacity may increase in future years.

RAW MATERIAL				
Item	Quality	Unit Price (\$/kg)	Notes	References
Toluene	95%	0.57	LTM average	[1]
Nitric acid	70%	0.27	Interpolated	[2] [3]
Methanol	99%	0.28	LTM average	[4]
Hydrogen	100%	4.75	-	[5]
Formic acid	85%	0.36	Q1 2020	[6]
CATALYST				
Item	Unit	Unit Price	Notes	References
H-mordenite	\$/kg	15.00	Supplier average	[7] [8]
Cobalt (II) phthalocyanine	\$/kg	12.00	-	[9]
Carbon palladium 5%	\$/g	6.50	Supplier average	[10] [11] [12]
Carbon platinum 5%	\$/g	20.30	Supplier average	[13] [14] [15]
PRODUCTS				
Item	Quality	Unit Price (\$/kg)	Notes	References
OTOL	~99%	10.67	Supplier average	[16] [17] [18]
PABH	~99%	35.74	Comparable market	[19]
PABA	100%	25.80	Supplier average	[20] [21] [22] [23] [24] [25]
UTILITIES				
Item	Unit	Unit Price	Notes	References
Cooling water (16°C)	\$/tonne	0.26	Industrial use	[26]
Refrigerant R1234ze	\$/kg	84.62	-	[27]
Antifreeze (ethylene glycol)	\$/kg	0.65	LTM average	[28]
Low-pressure steam (1.5 MPa)	\$/tonne	31.36	-	[29]
High-pressure steam (4.3 MPa)	\$/tonne	33.68	-	[29]
Electricity	\$/kWh	0.104	-	[30]

LABOUR			
Job role	Base wage per employee (\$/yr)	Notes	References
Process operator	14,100	Source average	[31] [32] [33]
Process engineer	26,600	Source average	[33] [34] [35]
Quality engineer	27,200	Source average	[33] [34] [35]
Plant manager	45,500	Source average	[33] [34] [35]
Admin staff	16,600	Source average	[33] [34] [35]
Foreman	28,200	Parallel role	[33] [36]
Area supervisor	31,300	Parallel role	[33] [37]

Notes:

- All prices and wages are subject to change over the lifetime of the plant, based on inflation, macro- and micro-economic patterns.
- The operation and capacity data of the plant are subject to change based upon new synthesis information.
- Nitroma reserves the right to make changes to the prices and wages listed in this agreement based upon new market information.
- Any changes made to this agreement will be reflected in a new document for mutual agreement.

DW Edwards

DW Edwards (Mar 15, 2021 09:41 GMT)

David Edwards

DEdwardsCorp plc

Mustafa Nasar

Mustafa Nasar

Nitroma

References

- [1] SunSirs Commodity Data Group, "China Toluene Spot Price," 2021. [Online]. Available: <http://www.sunsirs.com/uk/prodetail-177.html>.
- [2] Shijiazhuang Xinlongwei Chemical, "Factory manufacture Nitric Acid 30% to 68% with factory guarantee," alibaba.com, 2021. [Online]. Available: https://www.alibaba.com/product-detail/Factory-manufacture-Nitric-Acid-30-to-62220742105.html?spm=a2700.7724857.normal_offer.d_title.21b37a70EfrAtb&bypass=true. [Accessed February 2021].
- [3] SunSirs Commodity Data Group, "China Nitric acid Spot Price," 2021. [Online]. Available: <http://www.sunsirs.com/uk/prodetail-723.html>. [Accessed February 2021].
- [4] SunSirs Commodity Data Group, "China Methanol Spot Price," 2021. [Online]. Available: <http://www.sunsirs.com/uk/prodetail-429.html>. [Accessed February 2021].
- [5] Y. H. H. X. Zixuan Luo, "Cost-Economic Analysis of Hydrogen for China's Fuel Cell Transportation Field," *Energies*, vol. 13, 2020.
- [6] CEIC Data, "China CN: Market Price: Monthly Avg: Organic Chemical Material: Formic acid 94%," 2020. [Online]. Available: <https://www.ceicdata.com/en/china/china-petroleum--chemical-industry-association-petrochemical-price-organic-chemical-material/cn-market-price-monthly-avg-organic-chemical-material-formic-acid-94#:~:text=China's%20CN%3A%20Market%20Price%3A%20Monthly,RMB%2>. [Accessed February 2021].
- [7] Changsha Easchem Co., Limited, "Factory Price Buy Mordenite Zeolite," [Online]. Available: https://www.alibaba.com/product-detail/Factory-Price-Buy-Mordenite-Zeolite_60839951354.html?spm=a2700.7724857.normal_offer.d_title.52506dc7Go8isp&bypass=true. [Accessed February 2021].
- [8] Zr Catalyst Co., "Mordenite zeolite for catalyst MOR," [Online]. Available: https://www.alibaba.com/product-detail/Mordenite-zeolite-for-catalyst-MOR-structure_1600056193092.html?spm=a2700.7724857.normal_offer.d_title.52506dc7Go8isp&bypass=true. [Accessed February 2021].
- [9] Hangzhou Sartort Biopharma Co., "3317-67-7 high quality 99% cobalt phthalocyanine," [Online]. Available: https://www.alibaba.com/product-detail/3317-67-7-high-quality-99_62004472896.html?spm=a2700.7724857.normal_offer.d_title.25967fa9M3zsbq&bypass=true. [Accessed February 2021].
- [10] Hunan Minstrong Technology Co, "Pd Palladium Carbon Catalyst Price," [Online]. Available: https://www.alibaba.com/product-detail/Pd-Palladium-Carbon-Catalyst-Price_62342522560.html?spm=a2700.pc_countrysearch.main07.37.4ebe27b4y4jMHG&bypass=true. [Accessed February 2021].
- [11] Qingdao Sigma Chemical Co, "Hot selling 5% 10% palladium carbon catalyst/palladium carbon with reasonable price," 2021. [Online]. Available: https://www.alibaba.com/product-detail/Hot-selling-5-10-palladium-carbon_60815895204.html?spm=a2700.pc_countrysearch.main07.65.4ebe27b4y4jMHG&bypass=true. [Accessed February 2021].
- [12] Docstars (Shandong) Bio-Pharma, "5% 10% palladium carbon catalyst/palladium carbon with reasonable price," [Online]. Available: https://www.alibaba.com/product-detail/Hot-selling-5-10-palladium-carbon_1600084422577.html?spm=a2700.pc_countrysearch.main07.78.4ebe27b4y4jMHG&bypass=true. [Accessed February 2021].
- [13] Famouschem Technology (Shanghai), "High purity Platinum carbon catalyst from China mainland," [Online]. Available: https://www.alibaba.com/product-detail/High-purity-Platinum-carbon-catalyst-from_60735291366.html?spm=a2700.7724857.normal_offer.d_title.579c353dJoQ6pe&bypass=true. [Accessed February 2021].
- [14] Yurui (Shanghai) Chemical Co., "UIV Chem Pt 10% 20% platinum powder cas no 7440-06-4 platinum carbon catalyst, platinum carbon," [Online]. Available: https://www.alibaba.com/product-detail/UIV-Chem-Pt-10-20-platinum_62257250919.html?spm=a2700.7724857.normal_offer.d_title.579c353dJoQ6pe&bypass=true. [Accessed February 2021].
- [15] Shanghai Soyoung Biotechnology, "1%,5%,10%,15%,20% 7440-05-3 Platinum on activated carbon," [Online]. Available: https://www.alibaba.com/product-detail/1-5-10-15-20-7440_60313399085.html?spm=a2700.7724857.normal_offer.d_title.579c353dJoQ6pe&bypass=true. [Accessed February 2021].
- [16] Macklin, "o-toluidine, >99% (GC)," 2020. [Online]. Available: <http://www.macklin.cn/products/T818842>. [Accessed February 2021].
- [17] Shanghai Jizhi Biochemical Technology, "O-toluidine," [Online]. Available: <https://china.guidechem.com/trade/pdetail14729957.html>. [Accessed February 2021].
- [18] Jinan Century Tongda Chemical, "O-toluidine price," [Online]. Available: <https://china.guidechem.com/trade/pdetail22376230.html>. [Accessed February 2021].
- [19] Chemolim Chemicals, "4 Amino Benzaldehyde," [Online]. Available: <https://www.indiamart.com/proddetail/4-amino-benzaldehyde-15516675655.html>. [Accessed February 2021].

- [20] Xi'an Henrikang Biotech Co., Ltd., "Wholesale price Raw Material CAS 150-13-0 P-Aminobenzoic acid powder," [Online]. Available: https://www.alibaba.com/product-detail/Wholesale-price-Raw-Material-CAS-150_1600163386033.html?spm=a2700.galleryofferlist.normal_offer.d_title.6c7e7401w79TLY. [Accessed February 2021].
- [21] Xi'an ZB Biotech, "Organic Intermediate 4-Aminobenzoic acid / PABA / 150-13-0 in Bulk," [Online]. Available: https://www.alibaba.com/product-detail/Organic-Intermediate-4-Aminobenzoic-acid-PABA_62441222601.html?spm=a2700.galleryofferlist.normal_offer.d_title.6c7e7401w79TLY&bypass=true. [Accessed February 2021].
- [22] HeBei Chisure Biotechnology, "Factory Supply P-Aminobenzoic Acid / Paba CAS 150-13-0," [Online]. Available: <https://chisure.en.made-in-china.com/product/tvIQZciUYVpz/China-Factory-Supply-P-Aminobenzoic-Acid-Paba-CAS-150-13-0.html>. [Accessed February 2021].
- [23] Xi'an Frankherb Biotech Co, "Paba/CAS No. 150-13-0," [Online]. Available: <https://frankherb.en.made-in-china.com/product/lKgnrEsMvAkt/China-Paba-CAS-No-150-13-0.html>. [Accessed February 2021].
- [24] Puyer Biopharma Ltd., "PARA Amino Benzoic Acid (PABA) /Pure High Quality/ISO Certified Quality/ CAS 150-13-0," [Online]. Available: <https://puyerbiopharma.en.made-in-china.com/product/SwDEJOBrCGcl/China-PARA-Amino-Benzoic-Acid-PABA-Pure-High-Quality-ISO-Certified-Quality-CAS-150-13-0.html>. [Accessed February 2021].
- [25] Zhengzhou Qiangjin Science and Technology Trading Co., "4-Aminobenzoic Acid/P-Aminobenzoic Acid Paba CAS 150-13-0," [Online]. Available: <https://yustronger.en.made-in-china.com/product/GXrElHjAaoYq/China-4-Aminobenzoic-Acid-P-Aminobenzoic-Acid-Paba-CAS-150-13-0.html>. [Accessed February 2021].
- [26] Nanjing Water Affairs Group Ltd., "Water Price Table," 2019. [Online]. Available: <http://www.jlwater.com/10000386.html>. [Accessed February 2021].
- [27] WulaChem, "R1234ze Price," 2021. [Online]. Available: http://www.wulachem.cn/index.php?route=product/product&product_id=76. [Accessed February 2021].
- [28] SunSirs Commodity Data Group, "China Ethylene glycol Spot Price," 2021. [Online]. Available: <http://www.sunsirs.com/uk/prodetail-222.html>. [Accessed February 2021].
- [29] Nanjing Municipal Price Bureau, "Reply of Nanjing Municipal Price Bureau on Adjusting the Steam Price of Nanjing Chemical Industrial Park Thermal Power Co., Ltd.," 2008. [Online]. Available: <http://www.fsou.com/html/text/lar/170240/17024051.html>. [Accessed February 2021].
- [30] GlobalPetrolPrices, "China electricity prices," 2021. [Online]. Available: https://www.globalpetrolprices.com/China/electricity_prices/#:~:text=China%2C%20June%202020%3A%20The%20price,of%20power%2C%20distribution%20and%20taxes. [Accessed February 2021].
- [31] SalaryExpert, "Chemical Process Operator Salary," [Online]. Available: <https://www.salaryexpert.com/salary/job/chemical-process-operator/china>. [Accessed February 2021].
- [32] Economic Research Institute, "Chemical Plant Operator Salary," [Online]. Available: <https://www.erieri.com/salary/job/chemical-plant-operator/china/lhasa>. [Accessed February 2021].
- [33] SalaryExpert, "How much does a Factory Representative make in Nanjing, China?," 2021. [Online]. Available: <https://www.salaryexpert.com/salary/job/factory-representative/china/nanjing>. [Accessed February 2021].
- [34] SalaryExplorer, "Factory and Manufacturing Average Salaries in China 2021," [Online]. Available: <http://www.salaryexplorer.com/salary-survey.php?loc=44&loctype=1&job=33&jobtype=1#disabled>. [Accessed February 2021].
- [35] paylab China, "Salaries on positions in China," 2021. [Online]. Available: <https://www.paylab.com/cn/salaryinfo>. [Accessed February 2021].
- [36] PayScale, "Average Operations Manager Salary in China," [Online]. Available: https://www.payscale.com/research/CN/Job=Operations_Manager/Salary. [Accessed February 2021].
- [37] Plant Assistant Manager Salary, [Online]. Available: <https://www.salaryexpert.com/salary/job/plant-assistant-manager/china>. [Accessed February 2021].