



Pra Rancangan Pabrik

“Pabrik N-Butiraldehida dari Propilena, CO, dan H₂ Menggunakan Proses OXO RCH/RP Berbasis Katalis RH-TPPTS”

DAFTAR PUSTAKA

- Asahimetalfine. (2025). *Material Safety Data Sheet for Rhodium*.
<https://www.asahimetalfine.com/en/>. Diakses pada tanggal 16 September 2026.
- ASME. (2021). *Section II ASME Boiler and Pressure Vessel Code an Internal Code*. The American Society of Mechanical Engineers. Diakses pada tanggal 16 September 2026.
- Badan Pusat Statistik Indonesia. (2025). *Data impor butiraldehida di Indonesia*.
<https://www.bps.go.id/> Diakses pada tanggal 16 September 2026.
- Chemicals, Y. C. (2026). *Aluminium Sulfat Granular*.
https://www.alibaba.com/product-detail/Potash-Alum-Water-Treatment-Alum-Aluminium_60607186018.html?spm=a2700.prosearch.normal_offer.d_image.6d1367afZhWfuS&priceId=34a65d8f7d194ac095d313f370ac3c97. Diakses pada tanggal 16 September 2026.
- Comtrade. (2026). *Kebutuhan butiraldehida di negara-negara Asia-Pasifik*.
comtrade.un.org Diakses pada tanggal 16 September 2026.
- Cornils, B., & Herrmann, W. A. (2004). *Aqueous-Phase Organometallic Catalysis Edited by*. Wiley-VCH. Diakses pada tanggal 16 September 2026.
- Coulson J. M, R. J. F. (2005). *Chemical Engineering Design* (4 th ed). Elsevier.
- Echemi. (2026). *Triphenylphospine-3,3',3"-trisulfonic acid trisodium salt (TPPTS) RC02387*.
<https://www.echemi.com/produce/pr2511031221-triphenylphosphine-3-3-3-trisulfonic-acid-trisodium-salt-tppts.html>. Diakses pada tanggal 16 September 2026.
- Foust, A. S., Wenzel, L. A., Maus, L., & Andersen, L. B. (1962). *Principles of Unit Operations* (John Wiley & Sons (ed.)).
- Geankoplis, C. J. (1993). *Transport Processes and Unit Operation* (3rd ed.).
- Geankoplis, C. J. (2018). *Transport Processes and Separation Process Principles* (5 ed).



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-
- Guangxi Yukexin Industrial. (2026). *Bubuk Rhodium Kemurnian 99,9%*.
https://www.alibaba.com/product-detail/99-9-Purity-Rhodium-Powder-Precious_1601042224118.html?spm=a2706.products_search.normal_offer.6.565e67afNbLWSp&priceId=91a2eb34a91c4735a74b4adb36512bae. Diakses pada tanggal 16 September 2026.
- Hebei Fiza Technology. (2026). *Chlorine Granular SDIC 8-30 Mesh*.
https://id.made-in-china.com/co_fizachem/product_Factory-SupplyChlorine-Granular-SDIC-Nadcc-Granular-8-30mesh-56-60-_yserrhurng.html. Diakses pada tanggal 16 September 2026.
- Hebel Lijiang Biotechnology. (2026). *Resin Anion Exchange Maacroporus D301*.
- Imarc. (2025). *Isobutyraldehyde Prices 2025 Edition*.
<https://www.imarcgroup.com/butyraldehyde-pricing-report>. Diakses pada tanggal 16 September 2026.
- Indoenergi. (2026). *Harga Solar Industri*.
<https://www.hargasolarindustri.com/?m=1>. Diakses pada tanggal 16 September 2026.
- Intratec. (2026a). *Industrial Carbon Monoxide Price Indonesia*.
<https://www.intratec.us/>. Diakses pada tanggal 16 September 2026.
- Intratec. (2026b). *Industrial Hydrogen Price Indonesia*. <https://www.intratec.us/>. Diakses pada tanggal 16 September 2026.
- Intratec. (2026c). *Propylene Price Worldwide*. <https://www.intratec.us/>. Diakses pada tanggal 16 September 2026.
- Karassik. I. J., Cooper, P., & Heald, C. C. (2008). *Pump Handbook (4th ed)*. McGraw Hill.
- Kern D.Q. (1965). *Process Heat Transfer*. McGraw Hill.
- Kirk-Othemer. (1993). *Encyclopedia of Chemical Technology Volume 5 Edisi 4*. In *John Wiley and Sons*.
- Kirk-Othemer. (2004). *Encyclopedia of Chemical Technology Volume 4 Edisi 4*. In *John Wiley and Sons* (pp. 1–579).
- Kirk-Othemer. (2013). *Encyclopedia of Chemical Technology Volume 17 Edisi 4*.
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“Pabrik N-Butiraldehida dari Propilena, CO, dan H₂ Menggunakan Proses OXO RCH/RP Berbasis Katalis RH-TPPTS”

In John Wiley and Sons.

Kontraktor Karawang. (2026). *Estimasi Biaya Bangun Pabrik: Rincian Komponen & Anggaran*. <https://www.kontraktorkarawang.co.id/2026/06/estimasi-biaya-bangun-pabrik-rincian.html>. Diakses pada tanggal 16 September 2026.

KursDollar. (2026). *Kurs Dollar Hari ini-Minggu, 06 September 2026*. <https://www.kursdollar.net>. Diakses pada tanggal 16 September 2026.

Lamudi. (2025). *Harga Tanah per Meter Karawang 2025 Terbaru*. <https://www.lamudi.co.id/journal/harga-tanah-per-meter-karawang/>. Diakses pada tanggal 16 September 2026.

Levenspiel, O. (1999). *Chemical Reaction Engineering* ((3th ed)). John Wiley & Sons.

Mathew, V. W. (1967). *Distillation*. McGraw Hill.

McCabe, W. L., Smith, J. C., & Harriot, P. (2005). *Unit Operations of Chemical Engineering (7th ed.)*. McGraw Hill.

McWilliams, Mark L., Charleston, W. V. (1973). *Chemical Engineering*.

Metcalf & Eddy, I. (n.d.). *Wastewater Engineering Treatment and Reuse*.

Outlist Items Limited. (2026). *Drum Plastik HDPE*. <https://indonesian.alibaba.com/product-detail/55-Gallon-Open-Top-Plastic-Drum-10000044684651.html>. Diakses pada tanggal 16 September 2026.

Pemerintah Kabupaten Karawang. (2025). *Tarif Air Minum Perusahaan Umum Daerah Air Minum Tirta Tanum Kabupaten Karawang*. Diakses pada tanggal 16 September 2026. Diakses pada tanggal 16 September 2026.

Pemkab Karawang. (2024). *Prakiraan Cuaca Kabupaten Karawang*. www.bmkg.go.id. Diakses pada tanggal 16 September 2026.

Perry, R. H., Green, D. W. & Maloney, J. O. (1997). *Perry's Chemical Engineers' Handbook (7th ed.)*. McGraw Hill.

Perry, R. H., Green, D. W. & Maloney, J. O. (2008). *Perry's Chemical Engineers' Handbook (8th ed.)*. McGraw-Hill.

PLN. (2026). *Penetapan Penyesuaian Tarif Tenaga Listrik*. <https://www.pln.co.id/main>. Diakses pada tanggal 16 September 2026.



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- Poling, B. E., Prausnitz, J. M. (2004). *The Properties of Gases and Liquids (5th ed)*. McGraw Hill.
- PT Pertamina. (2017). *Material Safety Data Sheet for Propylene*.
- PT Pupuk Kujang. (2023a). *Material Safety Data Sheet for Hidrogen (H₂)*.
- PT Pupuk Kujang. (2023b). *Material Safety Data Sheet for Karbon Monoksida (CO)*.
- Qingdao Langyi Industrial. (2026). *Asam Klorida China 33%*. https://id.made-in-china.com/co_langyichem/product_China-HCl-33-for-Mining-Industry-Tech-Grade-and-Reagent-Grade-Hydrochloric-Acid_uohngnreuy.html. Diakses pada tanggal 16 September 2026.
- Schnelle, K. B. (2002). *Air Pollution Control Technology*. CRC Press LL.
- Seader, J. D., H. E. J. (2006). *Separation Process Principles*. John Wiley & Sons.
- Sevenerns, W. H. (1939). *Steam, Air, and Gas Power (3th ed)*. John Wiley & Sons.
- Shandong Kejian Chemical Co. Ltd. (2026). *N-Butiraldehida BA CAS 123-72-8*. https://www.alibaba.com/product-detail/Butyraldehyde-n-butyraldehyde-BA-CAS-123_1600323381019.html. Diakses pada tanggal 16 September 2026.
- Shandong Tenor Water Treatment Technology. (2026). *Poli Aluminium Klorida 1327-41-9*. https://www.alibaba.com/product-detail/Polyaluminium-Chloride-PAC-30-Al2O3-Water_1600865916356.html?spm=a2700.prosearch.normal_offer.d_title.3cb a67af2epGdH&priceId=9e72bd402235469ebb8f842101481a41. Diakses pada tanggal 16 September 2026.
- Shijiazhuang Xinlongwei Chemical. (2026). *Supply Liquid Sodium Hydroxide solution 50%*. https://sjzxlwchem.en.made-in-china.com/product/JyAnuUrToDkQ/China-Sodium-Hydroxide-Solution-50-ISO-FactoryPrice.html?pv_id=1k2n0vqm65e4&faw_id=1k2n10u380b2&bv_id=1k2n10u3e3ff&pbv_id=1k2n0vr1p6bfg. Diakses pada tanggal 16 September 2026.
- Sigma-Aldrich. (2022). *Material Safety Data Sheet for Air*.



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“Pabrik N-Butiraldehida dari Propilena, CO, dan H₂ Menggunakan Proses OXO RCH/RP Berbasis Katalis RH-TPPTS”

<https://www.sigmaaldrich.com>

Thermo Fisher Scientific. (2025). *Material Safety Data Sheet for Trisodium Triphenylphosphine Sulfonated (TPPTS)*. <https://www.thermofisher.com>

Tianjin Huayue International Trade. (2026). *Dowex HCR-S Penukar Ion Resin Amberlite*. https://www.alibaba.com/product-detail/Dowex-HCR-S-Ion-ExchangeResin_62484459071.html?spm=a2700.prosearch.normal_offer.4.562e67afH0qKQ9&priceId=a3b2fd4cb4c8477c905125fe2822b1aa&priceId=a3b2fd4cb4c8477c905125fe2822b1aa. Diakses pada tanggal 16 September 2026.

Treyball, R. E. (1981). *Mass-Transfer Operations* (3th ed). McGraw Hill.

Ulrich, G. D. (1984). *A GUIDE TO CHEMICAL ENGINEERING PROCESS DESIGN AND ECONOMICS*. John Wiley & Sons.

Walas, S. M. (1990). *Chemical Process Equipmen*. Butterworth-Heinemann.

Yang, C., Mao, Z., Wang, Y., & Chen, J. (2002). Kinetics of hydroformylation of propylene using RhCl (CO)(TPPTS)₂ / TPPTS complex catalyst in aqueous system. *Catalysis Today*, 74, 111–119.

Yaws, C. L. (1999). *Chemical Properties Handbook*. McGraw Hill.

Zhang, B., Peña Fuentes, D., & Borner, A. (2022). Hydroformylation Baoxin. *ChemTexts*. <https://doi.org/10.1007/s40828-021-00154-x>