

INTERNSHIP REPORT
PT. SOLVAY MANYAR
JUNE 14th – AUGUST 13th 2021



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SURABAYA
2021

LETTER OF APPROVAL

Seminar of **INTERNSHIP** for the student with identifying below:

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NRP : **5203018006**

Has been conducted on June 14th 2021, therefore the student has fulfilled one of several requirements to obtain **Bachelor of Engineering** degree in **Chemical Engineering Department**, Faculty of Engineering, Widya Mandala Catholic University Surabaya.

Gresik, 13 August 2021

Approved by

Manufacturing Manager

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LETTER OF DECLARATION

I hereby declare that this Internship Report is truly the work of my own and is not the work of others, either in part or in whole, unless it was stated in the references. If it is known that this Internship Report turned out to be the work of others. I am aware and accept the consequences that this Internship Report cannot be used as a condition to obtain a **Bachelor of Engineering** degree.

Surabaya, 13 August 2021

Student,



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Surabaya, 13 August 2021

Student,



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Surabaya, 13 August 2021

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PREFACE

First and foremost, praise be to God who has given His blessings, grace and gifts, so that the author can complete this Internship Project entitled "Internship Report PT. Solvay Manyar" as well as expected promptly. The purpose of making this Internship Report is to fulfil one of the requirements to obtain a Bachelor of Engineering in Chemical Department, Engineering Faculty, Widya Mandala Catholic University Surabaya.

The author realizes that this Internship Project cannot be completed without the support of various parties, both morally and materially. Therefore, the authors would like to thank all those who have helped in the preparation of this internship report, especially to:

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2. Warsono and Ir. Sandy Budi Hartono, S.T., M.Phil. Ph.D., IPM. supervisor who has taken their time to provide good and clear input, guidance, and direction in this internship process;
3. Staff and employees who have indirectly helped us in completing internship, and have spent time, provide input, and good direction during the practical work process;
4. Ir. Sandy Budi Hartono, S.T., M.Phil. Ph.D., IPM as head of Chemical Engineering, Faculty of Engineering, Widya Mandala Catholic University Surabaya;
5. All lecturers and staff of the Department of Chemical Engineering, Faculty of Engineering, Widya Mandala Catholic University Surabaya, have indirectly helped us in completing practical work;

Finally, the authors hope for criticism and suggestions from readers for the perfection of this internship project. The authors also hope that this report can be useful for the advancement of science and technology for readers.

Surabaya,

Authors

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ABSTRACT

PT Solvay Manyar is one of the surfactant factories in Indonesia. The factory was first established in 1989 as PT Manyar Kimindo, but over time and change partnership, its name changed to PT Solvay Manyar. The location of this factory is located on Jalan Raya Sembayat KM24, Sukomulyo Village, Manyar District, Gresik, Indonesia. PT Solvay Manyar produces several types of surfactants, such as LABSA/BABSA (Linear/Branched Alkyl Benzene Sulphonic Acid), SLS/ALS (Sodium/Ammonium Lauryl Sulphate), and SLES/ALES (Sodium/Ammonium Lauryl Ether Sulphate).

The process of producing surfactants at PT Solvay Manyar in principle uses a sulfonation reaction, which uses SO_3 gas that will be contacted with an organic solution in the Ballestra reactor. For SLS/ALS and SLES/ALES products, a neutralization process is required to match the type of product to be produced. These surfactant products are generally packaged in barrel form and will be distributed to several customers, such as Unilever and Syngenta.

PT Solvay Manyar has several utility units, such as water derived from groundwater/infiltration wells that will be used as cooling water. Steam/air derived from the boiler will be used as an instrument driver and hot water producer. Electricity comes from PLN that will be used for the production process and ESP.

This special project in the internship is focused on designing a Heat Exchanger that is suitable for the conditions that have been given. It is expected that the design that has been made can be realized and used by the factory so that it can help improve production efficiency.