كلية العلوم / قسم الكيمياء

# Using of Polyurethane as Surface Coating Material

*A Thesis Submitted*
*for fulfillment of the requirements for*
*the Degree of Master In Science*
*(Chemistry)*

***By***

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To

Department of Chemistry
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# إستعمال البولى يوريثان كمادة طلاء سطحية

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**Using of polyurethane as surface coating material**

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*Ahmed Hamed Ammar*

# ABBREVIATION

| Symbol | Nomenclature |
|---|---|
| PU | Polyurethane |
| TDI | Toluene diisocyanate |
| polyol | A substance containing several hydroxyl groups , A diol, triol and tetrol contain 2,3 and 4 hydroxyl groups respectively. |
| VAcVe | vinyl acetate versatic ester copolymer |
| Mg.silicate | magnesium silicate |
| $CaCO_3$ | calcium carbonate |
| $TiO_2$ | titanium dioxide |
| rpm | round per minute (stirring rate) |
| Phr | per hundred part |
| $T_b$ | Tensile strength at break |
| $E_b$ | Elongation at break |
| Mrad | Mega-rad= 10 KGy |
| KGy | Kilo-gray |
| EB | Electron beam |
| DOP | Dioctyl-phathalate |
| Shore A | Is used with relatively soft material. |
| Shore D | Is used with slightly harder material. |
| Composite | A putting together of parts to form a whole. |
| Solubility | Capable of being dissolved in a liquid. |

| | |
|---|---|
| Crosslinking | The establishment of chemical bonds between polymer molecule chains. It may be accomplished by heat, vulcanization, irradiation or the addition of a suitable chemical agent. |
| Degradation | The state of being reduced in polymer molecular chain. It may be accomplished by heat, vulcanization, irradiation or the addition of a suitable chemical agent. |
| PU- modeling clay | Polyurethane component mixed with either magnesium silicate or wood powder. |
| Two-pack | (Miscellaneous Technologies / Building) (of a paint, filler, etc.) supplied as two separate components, for example a base and a catalyst, that are mixed together immediately before use |

# Contents

## CHAPTER (II): Materials & Experimental Techniques

# List of Figures, Tables and Schemes