



HAPPY-CALL CO., LTD.

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CERTIFICATE OF ANALYSIS

| | |
|--------------------|--------------|
| Product name | VEGETOL 1218 |
| Lot. No. | 150514 |
| Code No. | 2.1.02 |
| Date of Production | 14-May-2015 |
| Date of Expiration | 14-May-2018 |

| | Specification | Method | Result |
|------------------------------|--|-----------------------------|--------|
| Appearance | light yellowish~yellowish brown liquid or paste, odorless or peculiar odor | JSQI | pass |
| Identification | Absorbance at 2920cm^{-1} , 1735cm^{-1} , 1465cm^{-1} , 1175cm^{-1} and 1110cm^{-1} | JSQI, IR-Liquid film method | pass |
| Acid Value | 15Max | JSQI(Method II, 5g) | 5.4 |
| Saponification Value | 150-180 | JSQI(1g) | 171.5 |
| Hydroxyl Value | 90~185 | JSQI(1.5g) | 122.4 |
| Iodine Value | 25Max | JSQI(4g) | 4.9 |
| Heavy Metal (ppm) | 20Max | JSQI(Method II, 1g) | pass |
| Arsenic (ppm) | 2Max | JSQI(Method III, 1g) | pass |
| Residue on Ignition (%) | 1.0Max | JSQI(Method II, 1g) | pass |
| Loss on Drying | 2.0Max | JSQI(2g, 105 °C, 2hr) | pass |
| Viscosity (mPa·s/ 60°C) | 300~800 | viscosity meter | 550 |
| Color (Gardner) | 4Max | color meter | 1.3 |
| Melting Point (°C) | 30~45 | JSQI(Method II) | 36.6 |
| Examination of radioactivity | Less than detection limit | raditional detector | pass |

Certified By :

Kim Dongchun, QC Manager

Date of issue : 11-Nov-2015