

# CHEMSYSTEMS **PPE PROGRAM**

## Quarterly Business Analysis

United States  
Quarter 3, 2013

Issued: September 2013



44 South Broadway, White Plains, New York 10601, USA  
Tel: +1 914 609 0300 Fax: +1 914 609 0399

Copyright© by Nexant, Inc. 2013

This report was prepared by Nexant, Inc. ("Nexant") and is part of the ChemSystems Online<sup>®</sup> suite. Except where specifically stated otherwise in this Report, the information contained herein is prepared on the basis of information that is publicly available, and contains no confidential third party technical information to the best knowledge of Nexant. Aforesaid information has not been independently verified or otherwise examined to determine its accuracy, completeness, or financial feasibility.

Neither NEXANT, Subscriber nor any person acting on behalf of either assumes any liabilities with respect to the use of or for damages resulting from the use of any information contained in this Report. Nexant does not represent or warrant that any assumed conditions will come to pass.

The report is submitted on the understanding that the Subscriber will maintain the contents confidential except for the Subscriber's internal use. The Report should not be reproduced, distributed, or used without first obtaining prior written consent by Nexant. Each Subscriber agrees to use reasonable effort to protect the confidential nature of the Report."

# Contents

| Section                                                            | Page        |
|--------------------------------------------------------------------|-------------|
| <b>1 Executive Summary .....</b>                                   | <b>1</b>    |
| <b>2 Crude Oil, Refining and Petrochemical Feedstocks .....</b>    | <b>7</b>    |
| 2.1 CRUDE OIL AND REFINING .....                                   | 7           |
| 2.2 PETROCHEMICAL FEEDSTOCKS.....                                  | 12          |
| <b>3 Olefins .....</b>                                             | <b>17</b>   |
| 3.1 ETHYLENE.....                                                  | 17          |
| 3.2 PROPYLENE .....                                                | 31          |
| 3.3 BUTADIENE.....                                                 | 38          |
| <b>4 Polyolefins.....</b>                                          | <b>41</b>   |
| 4.1 LOW DENSITY POLYETHYLENE (LDPE) .....                          | 41          |
| 4.2 LINEAR LOW DENSITY POLYETHYLENE (LLDPE) .....                  | 46          |
| 4.3 HIGH DENSITY POLYETHYLENE (HDPE).....                          | 51          |
| 4.4 POLYPROPYLENE (PP).....                                        | 56          |
| <b>5 Vinyls.....</b>                                               | <b>61</b>   |
| 5.1 CHLORALKALI/ETHYLENE DICHLORIDE/VINYL CHLORIDE<br>MONOMER..... | 61          |
| 5.2 POLYVINYL CHLORIDE (PVC).....                                  | 73          |
| <b>6 Aromatics.....</b>                                            | <b>78</b>   |
| 6.1 BENZENE, TOLUENE AND XYLENES .....                             | 78          |
| 6.2 CYCLOHEXANE.....                                               | 97          |
| <b>7 Styrenics.....</b>                                            | <b>102</b>  |
| 7.1 STYRENE.....                                                   | 102         |
| 7.2 POLYSTYRENE .....                                              | 107         |
| <b>8 Polyester and Intermediates.....</b>                          | <b>112</b>  |
| 8.1 MONO ETHYLENE GLYCOL (MEG).....                                | 112         |
| 8.2 PARA-XYLENE (PX) AND ORTHO-XYLENE (OX).....                    | 117         |
| 8.3 PURIFIED TEREPHTHALIC ACID (PTA).....                          | 123         |
| 8.4 POLYETHYLENE TEREPHTHALATE (PET).....                          | 128         |
| <b>9 Propylene Derivatives.....</b>                                | <b>133</b>  |
| 9.1 ACRYLONITRILE (ACN) .....                                      | 133         |
| 9.2 CUMENE AND PHENOL .....                                        | 138         |
| <b>10 Competitive Regional Economics .....</b>                     | <b>146</b>  |
| <b>Appendix</b>                                                    | <b>Page</b> |
| <b>A Prices .....</b>                                              | <b>151</b>  |