

# EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

Permit Number 4005

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

## AIR CONTAMINANTS DATA

| Emission<br>Point No. (1) | Source<br>Name (2)                                  | Air Contaminant<br>Name (3) | Emission Rates * |         |
|---------------------------|---|-----------------------------|------------------|---------|
|                           |   |                             | lb/hr            | TPY (5) |
| 1                         | Scrubber System<br>(Scrubber Nos. 1 and 2)          | VOC                         | <0.01            | 0.02    |
|                           |   | CH <sub>2</sub> O           | 0.03             | 0.018   |
|                           |   | HCl                         | <0.01            | <0.01   |
|                           |   | COS                         | 0.006            | 0.001   |
| 2                         | Flare   | VOC                         | 4.70             | 1.20    |
|                           |   | EO                          | 1.37             | 0.18    |
|                           |   | Naphthalene                 | <0.01            | <0.01   |
|                           |   | MeOH                        | <0.01            | <0.01   |
|                           |   | PO                          | 1.46             | 0.20    |
|                           |   | Xylene                      | <0.01            | <0.01   |
| 3                         | Gas-Fired Boiler                                    | NO <sub>x</sub>             | 0.63             | 2.76    |
|                           |   | CO                          | 0.24             | 1.05    |
| 4                         | Dept. 79 - Tank Farm                                | VOC                         | 0.12             | 0.52    |
| 5                         | Dept. 79 - Fugitives (4)                            | VOC                         | 1.06             | 4.65    |
| 6                         | Vent Transfer and Drumming<br>Operations (Dept. 79) | VOC                         | 1.41             | 0.15    |
| 7                         | Oil Heaters   | VOC                         | 0.016            | 0.07    |
|                           |   | NO <sub>x</sub>             | 0.90             | 3.94    |
|                           |   | CO                          | 1.51             | 6.62    |
| 8                         | Dept. 41 - Tank Farm                                | VOC                         | 0.07             | 0.155   |
|                           |   | HCl                         | 0.02             | 0.075   |

## EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

## AIR CONTAMINANTS DATA

| Emission<br>Point No. (1) | Source<br>Name (2)                                    | Air Contaminant<br>Name (3) | Emission Rates * |         |
|---------------------------|---|-----------------------------|------------------|---------|
|                           |   |                             | lb/hr            | TPY (5) |
| 9                         | Fugitives and Transfer<br>and Drumming Operations (4) | VOC                         | 0.021            | <0.01   |
|                           |   | HCl                         | 0.003            | <0.001  |
|                           |   | CH <sub>2</sub> O           | 0.042            | 0.085   |
|                           |   | NH <sub>3</sub>             | 0.06             | 0.26    |
| 10                        | Aeration Basin  | CH <sub>2</sub> O           | <0.01            | 0.03    |
| 11                        | Cooling Tower   | VOC                         | 0.36             | 1.58    |
| 12                        | Raw Material Tank (4)                                 | TMA                         | 0.02             | <0.01   |
|                           |   | MC                          | 0.36             | 1.28    |
|                           |   | EPI                         | 0.02             | 0.02    |
| 13                        | Reaction Area (4)                                     | TMA                         | <0.01            | <0.01   |
|                           |   | MC                          | 0.01             | 0.04    |
|                           |   | EPI                         | <0.01            | <0.01   |
| 14                        | Scrubber No. 79S-1                                    | TMA                         | <0.01            | <0.01   |
|                           |   | MC                          | 4.33             | 0.03    |
|                           |   | EPI                         | 0.04             | <0.01   |
| 15                        | Product Storage and Loading                           | TMA                         | 0.02             | <0.01   |
|                           |   | MC                          | <0.01            | <0.01   |
|                           |   | EPI                         | <0.01            | <0.01   |
| 16                        | Scrubber System<br>(Scrubbers 79S-2A, 2B and C)       | VOC                         | 1.20             | 0.84    |
|                           |   | MeOH                        | 0.06             | 0.01    |
|                           |   | Xylene                      | 0.01             | 0.01    |
|                           |   | HAN 0.17                    | 0.01             |         |
|                           |   | Isopropanol                 | 0.01             | 0.01    |
|                           |   | Ethylbenzene                | 0.01             | 0.01    |
| 17                        | Scrubber System                                       | VOC                         | <0.01            | 0.01    |
| 18                        | Fugitives (4)   | Total VOC                   | 4.60             | 3.18    |
|                           |   | EO                          | 0.05             | 0.22    |

## EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

## AIR CONTAMINANTS DATA

| Emission<br>Point No. (1) | Source<br>Name (2)  | Air Contaminant<br>Name (3) | <u>Emission Rates *</u> |         |
|---------------------------|---------------------|-----------------------------|-------------------------|---------|
|                           |                     |                             | lb/hr                   | TPY (5) |
|                           |                     | Naphthalene                 | 0.04                    | 0.05    |
|                           |                     | MeOH                        | 0.42                    | 0.42    |
|                           |                     | PO                          | 0.05                    | 0.12    |
|                           |                     | Xylene                      | 0.12                    | 0.15    |
|                           |                     | Acrylic Acid                | 0.08                    | 0.05    |
|                           |                     | TDI                         | <0.01                   | 0.01    |
|                           |                     | Non-HAP VOC                 | 3.31                    | 2.12    |
|                           |                     | HAN 0.01                    | 0.02                    |         |
|                           |                     | Ethyl Benzene               | 0.01                    | 0.01    |
| 19                        | Tank 7946 and Rinse | VOC                         | <0.01                   | <0.01   |
| 20                        | Scrubber No. S7940  | VOC                         | 0.04                    | <0.01   |
| 21                        | Scrubber No. S7943  | VOC                         | 2.01                    | 0.21    |
| 22                        | Scrubber No. S7944  | VOC                         | 0.03                    | <0.01   |
| 23                        | Tank 7942           | VOC                         | <0.01                   | <0.01   |
| 24                        | Tank 7938           | VOC                         | 0.03                    | <0.01   |
| 25                        | Tank 7929           | VOC                         | 0.03                    | <0.01   |
| 26                        | Tank 7930           | VOC                         | 0.03                    | <0.01   |
| 27                        | Tank 7936           | VOC                         | 0.63                    | 2.75    |
| 28                        | Tank 7935           | VOC                         | 0.58                    | 0.01    |
| 29                        | Tank 7934           | VOC                         | 0.57                    | 0.01    |
| 30                        | Tank 7945           | VOC                         | <0.01                   | <0.01   |
| 31                        | Drum Loading        | VOC                         | <0.01                   | <0.01   |
|                           |                     | Polymerized Polyol          | 0.12                    | 0.02    |

## EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

## AIR CONTAMINANTS DATA

| Emission<br>Point No. (1) | Source<br>Name (2)             | Air Contaminant<br>Name (3) | <u>Emission Rates *</u> |         |
|---------------------------|--------------------------------|-----------------------------|-------------------------|---------|
|                           |                                |                             | lb/hr                   | TPY (5) |
| 32                        | T-7949                         | Xylene                      | 0.46                    | 0.01    |
|                           |                                | Ethyl Benzene               | 0.12                    | 0.01    |
| 33                        | Resin Storage (Tank 7948)      | VOC                         | 0.98                    | 0.16    |
| 34                        | Fatty Acid Storage (Tank 7950) | VOC                         | <0.01                   | <0.01   |
| 35                        | PTBP Storage (Tank 7947)       | VOC                         | <0.01                   | <0.01   |
| 36                        | T-7925                         | Polyol                      | 0.98                    | 0.04    |
| 37                        | Boiler                         | VOC                         | 0.05                    | 0.22    |
|                           |                                | NO <sub>x</sub>             | 0.98                    | 4.29    |
|                           |                                | CO                          | 0.83                    | 3.64    |
| 38                        | TF-13                          | VOC                         | 27.00                   | 0.83    |
| 39                        | TF-15 Fugitives                | EO                          | 0.02                    | 0.10    |
|                           |                                | PO                          | 0.02                    | 0.10    |
| 40                        | TF-16 (Tank and Fugitives)     | HAN                         | 0.02                    | 0.07    |
|                           |                                | Xylene                      | 0.02                    | 0.01    |
|                           |                                | Ethyl Benzene               | 0.01                    | 0.01    |
|                           |                                | Polyols                     | 0.01                    | 0.05    |
| 41                        | T-7953                         | VOC                         | 0.01                    | 0.01    |
| 42                        | T-7968                         | VOC                         | 0.01                    | 0.01    |
| 43                        | T-7940<br>(Tank and Fugitives) | Deta                        | 0.01                    | 0.02    |
| 44                        | T-7941<br>(Tank and Fugitives) | Deta                        | 0.01                    | 0.04    |
|                           |                                | imidazoline                 | 0.01                    | 0.01    |
| 45                        | T-7942                         | Deta                        | 0.01                    | 0.04    |

|    |                                |                    |      |      |
|----|--------------------------------|--------------------|------|------|
|    | (Tank and Fugitives)           |                    |      |      |
| 46 | T-7955<br>(Tank and Fugitives) | Monoethanol amine  | 0.01 | 0.03 |
| 47 | T-7966<br>(Tank and Fugitives) | imidazoline        | 0.03 | 0.02 |
|    |                                | HAN                | 0.01 | 0.01 |
|    |                                | Oxyalkylated Amine | 0.02 | 0.02 |
|    |                                | Amide              | 0.01 | 0.01 |
|    |                                | MeOH               | 0.01 | 0.01 |
|    |                                | 2-Butoxy-ethanol   | 0.01 | 0.01 |
| 48 | T-7967<br>(Tank and Fugitives) | HAN                | 0.14 | 0.15 |
|    |                                | Xylene             | 0.01 | 0.01 |
|    |                                | Ethyl Benzene      | 0.01 | 0.01 |
|    |                                | IPA                | 0.01 | 0.01 |
|    |                                | Complex Polyol     | 0.01 | 0.01 |
|    |                                | Polyol Resin       | 0.01 | 0.01 |
|    |                                | Nonyl Phenol Resin | 0.01 | 0.01 |
| 49 | Drum and Tote Loading          | VOC                | 4.95 | 0.15 |
|    |                                | HAN                | 3.45 | 0.10 |
|    |                                | Xylene             | 0.05 | 0.01 |
|    |                                | MeOH               | 1.23 | 0.04 |
|    |                                | IPA                | 0.16 | 0.01 |
|    |                                | Ethyl Benzene      | 0.01 | 0.01 |
| 50 | T-7910                         | HAN                | 0.68 | 0.03 |
|    |                                | Naphthalene        | 0.01 | 0.01 |

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.

(2) Specific point source name. For fugitive sources use area name or fugitive source name.

(3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1

CH<sub>2</sub>O - formaldehyde

HCl - hydrogen chloride

COS - carbonyl sulfide

EO - ethylene oxide

MeOH - methyl alcohol

HAN - heavy aromatic naphtha

IPA - isopropanol

PO - polypropylene oxide

NO<sub>x</sub> - total oxides of nitrogen

CO - carbon monoxide

NH<sub>3</sub> - ammonia

TMA - trimethylamine

MC - methyl chloride

EPI - epichlorohydrin

TDI - toluene diisocyanate

non-HAP VOC - nonhazardous air pollutant VOC

total VOC - total volatile organic compound

(4) Fugitive emissions are an estimate only and should not be considered as a maximum allowable emission rate.

\* Emission rates are based on and the facilities are limited by the following maximum operating schedule:

Hrs/day \_\_\_\_\_ Days/week \_\_\_\_\_ Weeks/year \_\_\_\_\_ or Hrs/year 8,760

(5) Annual emissions are based on a rolling 12-month basis.

Dated January 30, 2004