

Premium Synthetic (PSY) Pool Quality Specifications

| Quality Specifications for Component Streams to the Premium Synthetic (PSY) Pool | | | | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------|-------------------|------|--------------------|------------|----------------------------|---------------------|----------------------------|------------------------------------------------|
| Quality | Units | Min | Max | Typical* | Pool Typical Ex-Superior** | Referee Test Method | Test Frequency | Enbridge Response to Crude Not Meeting Quality |
| Existing Specifications | | | | | | | | |
| Density (15C) | kg/m ³ | >799 | <876 | 830-876*** | 864 | ASTM D4052 | Frequency: AR ² | Delayed shut-in ⁶ |
| Viscosity, at reference temp | cSt | 2 | <20 | | | ASTM D7042 | Frequency: QR ⁴ | Delayed shut-in ⁶ |
| Olefins, total ¹ | mass% | | <1 | | | H NMR | Frequency: R ⁷ | Immediate shut-in ⁵ |
| Vapour Pressure (VPCR _{4.1} @ 37.8 C) | kPa | | 85/95 ⁸ | | | ASTM D6377 | Frequency: QR ⁴ | Immediate shut-in ⁵ |
| S&W | vol% | | 0.5 | | | ASTM D4007 | Frequency: AR ² | Immediate shut-in ⁵ |
| Organic Chlorides, in naphtha fraction ¹ | wppm | | <1 | | | ASTM D4929 | Frequency: QR ⁴ | Immediate shut-in ⁵ |
| Component Typical | | | | | | | | |
| Sulphur, total | wt% | | | <0.2 | 0.20 | ASTM D4294 | Frequency: AR ² | Notification Process ⁶ |
| Naphtha (IBP-350F) | mass% recovered | | | 8-24 | 14 | ASTM D7169 | Frequency: MR ³ | Notification Process ⁶ |
| Distillate (350-650F) | mass% recovered | | | 52-70 | 46 | ASTM D7169 | Frequency: MR ³ | Notification Process ⁶ |
| Gas Oil (650-980F) | mass% recovered | | | 20-30 | 38 | ASTM D7169 | Frequency: MR ³ | Notification Process ⁶ |
| Resid (+980F) | mass% recovered | | | <1 | | ASTM D7169 | Frequency: MR ³ | Notification Process ⁶ |
| Deemed Butane | vol% | | | ≤3 | 1.3 | ASTM D7169 | | |
| Other Requirements | | | | | | | | |
| <ul style="list-style-type: none"> Stream must be produced by an Upgrader Cetane index in distillate: min 40 | | | | | | | | |

*The expected or anticipated crude quality of individual components, understanding the fact that there may be, on occasion, variability outside of the range of the typical.

**The estimated crude quality of a pool is based on a limited number of random composite samples of batches ex-Superior, timeframe June 2022 – May 2023.

***This specification was revised March 5th, 2014.

Notes

- For these properties, blending should not occur.
- AR: All Receipts of PSY component streams tested using weekly composite.
- MR: Monthly Random testing of PSY component streams.
- QR: Quarterly Random testing of PSY component streams. Upon violation perform probational testing at Enbridge discretion.
- Immediate shut-in upon identifying violation. Request third party Certificate of Analysis prior to subsequent receipt.
- Upon violation, notification to applicable party, increase monitoring. Consequence based on outcome of increased monitoring.
- R: Annual Random testing.
- Max 85kPa from May 1st through October 31st
Max 95kPa from November 1st through April 30th