



## Agrichemical Biorenewable Carbon Index

Stepan Company's goal is to be transparent with our existing chemistries, processes, and commercial products regarding the Biorenewable Carbon Index as described below. As we strive to continue to meet your needs, we are committed to understanding current and future regulations and directives along with the continually changing landscape of certification standards. Stepan is capable and willing to help you develop and market your green line. We are committed to understanding and monitoring changes to the USDA's National Organic Program as well as programs outside of the Agrichemical field.

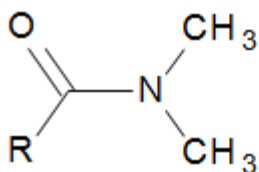
Stepan Company's Agrichemical Biorenewable Carbon Index (BCI) Guide provides you with a single value based on the percent carbon derived from a biorenewable resource. Biorenewable is defined by Stepan as originating from animal, plant, or marine material. The value is calculated by dividing the number of biorenewable carbons by the total number of carbons in the entire molecule. The calculation is based on the idealized molecule as represented on our Stepan Technical Product Bulletins. Products composed of blended materials are calculated based on the normalized percent actives of the Stepan products only. This BCI guide includes agrichemical products that are composed of greater than zero percent biorenewable carbon.

### Example BCI Calculation

#### HALLCOMID™ M-10

**Chemical Description: N,N Dimethylcapramide**

**BCI: 83**



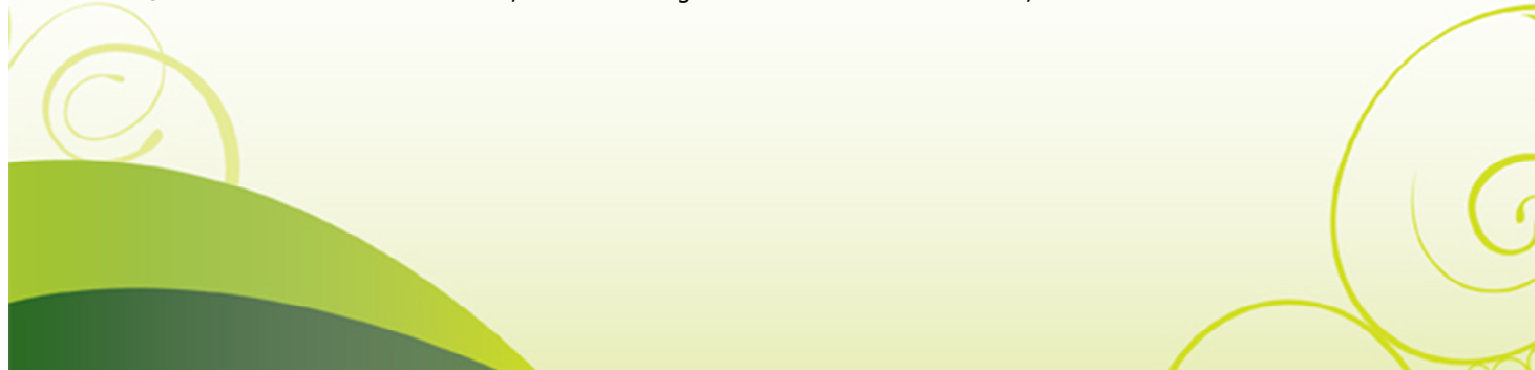
|              | natural methyl ester           |     | dimethyl                          | Biorenewable Carbon Index                    |
|--------------|--------------------------------|-----|-----------------------------------|--|
|              | C <sub>10</sub>                |     | amide                             |  |
|              | C <sub>9</sub> H <sub>19</sub> | C=O | -N(CH <sub>3</sub> ) <sub>2</sub> | biorenewable carbon divided by total carbons |
| # of carbons | 9                              | 1   | 2                                 | 100 x (10 ÷ (10 + 2)) = <b>83</b>            |

| STEPAN TRADE NAME          | BCI | CHEMICAL DESCRIPTION   | CAS NO.    | ACTIVE % | 40 CFR STATUS                     |
|----------------------------|-----|--|------------|----------|-----------------------------------|
| <b>AMINE OXIDES</b>        |     |  |            |          |                                   |
| <b>AMMONYX® LO SPECIAL</b> | 86  | Lauramine Oxide  | 1643-20-5  | 30       | 40 CFR 180.910                    |
| <b>ETHER SULFATES</b>      |     |  |            |          |                                   |
| <b>STEOL® CA-330</b>       | 67  | Ammonium Laureth Sulfate, 3 Moles EO                               | 32612-48-9 | 28       | 40 CFR 180.910 and 40 CFR 180.930 |
| <b>STEOL® CA-330-E</b>     | 67  | Ammonium Laureth Sulfate, 3 Moles EO                               | 32612-48-9 | 25       | 40 CFR 180.910 and 40 CFR 180.930 |
| <b>STEOL® CS-270</b>       | 75  | Sodium Laureth Sulfate, 2 Moles EO                                 | 68585-34-2 | 70       | 40 CFR 180.910 and 40 CFR 180.930 |
| <b>STEOL® CS-270 C</b>     | 75  | Sodium Laureth Sulfate, 2 Moles EO                                 | 68585-34-2 | 70       | 40 CFR 180.910 and 40 CFR 180.930 |
| <b>STEOL® CS-330</b>       | 67  | Sodium Laureth Sulfate, 3 Moles EO                                 | 9004-82-4  | 28       | 40 CFR 180.910 and 40 CFR 180.930 |
| <b>STEOL® CS-370</b>       | 67  | Sodium Laureth Sulfate, 3 Moles EO                                 | 9004-82-4  | 70       | 40 CFR 180.910 and 40 CFR 180.930 |
| <b>STEOL® CS-370-E</b>     | 67  | Sodium Laureth Sulfate, 3 Moles EO                                 | 9004-82-4  | 70       | 40 CFR 180.910 and 40 CFR 180.930 |
| <b>TOXIMUL® TAABS-5</b>    | 35  | Branched Alcohol Ether Sulfate/Tallow Amine Ethoxylate, POE-5 Salt | N/A        | 100      | 40 CFR 180.920                    |
| <b>TOXIMUL® TAABS-8</b>    | 31  | Branched Alcohol Ether Sulfate/Tallow Amine Ethoxylate, POE-8 Salt | N/A        | 100      | 40 CFR 180.920                    |
| <b>TOXIMUL® TAAS-5</b>     | 66  | Linear Alcohol Ether Sulfate/Tallow Amine Ethoxylated, POE-5 Salt  | N/A        | 100      | 40 CFR 180.920                    |
| <b>TOXIMUL® TAAS-8</b>     | 58  | Linear Alcohol Ether Sulfate/Tallow Amine Ethoxylated, POE-8 Salt  | N/A        | 100      | 40 CFR 180.920                    |
| <b>TOXIMUL® TANS-5</b>     | 33  | Alkylphenol Ether Sulfate/Tallow Amine Ethoxylated Salts           | N/A        | 100      | 40 CFR 180.920                    |
| <b>TOXIMUL® TANS-6</b>     | 32  | Alkylphenol Ether Sulfate/Tallow Amine Ethoxylated Salts           | N/A        | 100      | 40 CFR 180.920                    |
| <b>TOXIMUL® TANS-8</b>     | 30  | Alkylphenol Ether Sulfate/Tallow Amine Ethoxylated Salts           | N/A        | 100      | 40 CFR 180.920                    |
| <b>TOXIMUL® TANS-15</b>    | 25  | Alkylphenol Ether Sulfate/Tallow Amine Ethoxylated Salts           | N/A        | 100      | 40 CFR 180.920                    |



| STEPAN TRADE NAME                 | BCI | CHEMICAL DESCRIPTION  | CAS NO.                          | ACTIVE % | 40 CFR STATUS                        |
|-----------------------------------|-----|---|----------------------------------|----------|--------------------------------------|
| <b>SOLVENTS</b>                   |     |   |                                  |          |                                      |
| <b>HALLCOMID™ M-8-10</b>          | 82  | [N,N-Dimethyloctamide (N,N-Dimethylcaprylamide) AND N,N-Dimethyldecanamide (N,N-Dimethylcapramide)] | 1118-92-9<br>(and)<br>14433-76-2 | 100      | 40 CFR 180.920                       |
| <b>HALLCOMID™ M-10</b>            | 83  | [N,N-Dimethyldecanamide (N,N-   | 14433-76-2                       | 100      | 40 CFR 180.920                       |
| <b>STEPAN® 108</b>                | 100 | Caprylic/Capric Triglyceride  | 73398-61-5                       | 100      | 40 CFR 180.910 and<br>40 CFR 180.930 |
| <b>STEPAN® C-25</b>               | 90  | Methyl Caprylate/Caprates   | 68937-83-7                       | 100      | 40 CFR 180.910                       |
| <b>STEPAN® C-42</b>               | 93  | Methyl Laurate/Methyl Myristate   | 111-82-0<br>(and)<br>124-10-7    | 100      | 40 CFR 180.910                       |
| <b>STEPAN® C-65</b>               | 94  | Methyl Palmitate/Oleate   | 67762-38-3                       | 100      | 40 CFR 180.910                       |
| <b>STEPSOL® ME</b>                | 95  | Methyl Oleate, Methyl Linoleate   | 67784-80-9                       | 100      | 40 CFR 180.910                       |
| <b>STEPSOL® ROE-W</b>             | 95  | Canola Oil, Methyl Ester  | 67762-38-3                       | 100      | 40 CFR 180.910                       |
| <b>WETTING AGENTS</b>             |     |   |                                  |          |                                      |
| <b>STEPWET® DF-95</b>             | 100 | Sodium Lauryl Sulfate   | 151-21-3                         | 93       | 40 CFR 180.910 and<br>40 CFR 180.930 |
| <b>STEPWET® DF-95<br/>NEEDLES</b> | 100 | Sodium Lauryl Sulfate   | 151-21-3                         | 93       | 40 CFR 180.910 and<br>40 CFR 180.930 |

| STEPAN TRADE NAME          | BCI | CHEMICAL DESCRIPTION                | CAS NO. | HLB | 40 CFR STATUS  |
|----------------------------|-----|-------------------------------------|---------|-----|----------------|
| <b>EMULSIFIER BLENDS</b>   |     |                                     |         |     |                |
| <b>MICRO-STEP® H-307-A</b> | 61  | Sulfonate/Nonionic Surfactant Blend | N/A     | 12  | 40 CFR 180.910 |
| <b>TOXIMUL® DM-83</b>      | 17  | Anionic/Nonionic Detergent Blend    | N/A     | 13  | 40 CFR 180.910 |
| <b>TOXIMUL® 3403F</b>      | 22  | Sulfonate/Nonionic Surfactant Blend | N/A     | 13  | 40 CFR 180.910 |
| <b>TOXIMUL® 3406F</b>      | 11  | Sulfonate/Nonionic Surfactant Blend | N/A     | 10  | 40 CFR 180.910 |
| <b>TOXIMUL® 3473F</b>      | 29  | Sulfonate/Nonionic Blend            | N/A     | 10  | 40 CFR 180.910 |
| <b>TOXIMUL® 3474F</b>      | 10  | Sulfonate/Nonionic Blend            | N/A     | 6   | 40 CFR 180.910 |
| <b>TOXIMUL® 3476F</b>      | 16  | Sulfonate/Nonionic Blend            | N/A     | 8   | 40 CFR 180.910 |
| <b>TOXIMUL® 3479F</b>      | 4   | Sulfonate/Nonionic Blend            | N/A     | 13  | 40 CFR 180.910 |
| <b>TOXIMUL® 3483</b>       | 31  | Anionic/Nonionic Detergent Blend    | N/A     | 10  | 40 CFR 180.910 |
| <b>TOXIMUL® 3484</b>       | 23  | Anionic/Nonionic Detergent Blend    | N/A     | 9   | 40 CFR 180.910 |



| STEPAN TRADE NAME                  | BCI | CHEMICAL DESCRIPTION                   | CAS NO.    | HLB | 40 CFR STATUS                        |
|------------------------------------|-----|--|------------|-----|--------------------------------------|
| <b>ETHOXYLATED CASTOR OILS</b>     |     |  |            |     |                                      |
| <b>TOXIMUL® 8240</b>               | 44  | Castor Oil Ethoxylate, POE-36          | 61791-12-6 | 13  | 40 CFR 180.960                       |
| <b>TOXIMUL® 8241</b>               | 49  | Castor Oil Ethoxylate, POE-30          | 61791-12-6 | 12  | 40 CFR 180.960                       |
| <b>TOXIMUL® 8242</b>               | 42  | Castor Oil Ethoxylate, POE-40          | 61791-12-6 | 13  | 40 CFR 180.960                       |
| <b>ETHOXYLATED FATTY ACIDS</b>     |     |  |            |     |                                      |
| <b>NINEX® MT-603</b>               | 74  | Fatty Acid Ethoxylate, POE-3           | 61791-00-2 | 6   | 40 CFR 180.910 and<br>40 CFR 180.930 |
| <b>NINEX® MT-610</b>               | 46  | Fatty Acid Ethoxylate, POE-10          | 61791-00-2 | 12  | 40 CFR 180.910 and<br>40 CFR 180.930 |
| <b>NINEX® MT-615</b>               | 36  | Fatty Acid Ethoxylate, POE-15          | 61791-00-2 | 13  | 40 CFR 180.910 and<br>40 CFR 180.930 |
| <b>NINEX® MT-630F</b>              | 22  | Fatty Acid Ethoxylate, POE-30          | 67784-86-5 | 16  | 40 CFR 180.910 and<br>40 CFR 180.930 |
| <b>ETHOXYLATED FATTY AMINES</b>    |     |  |            |     |                                      |
| <b>TOXIMUL® CA-2</b>               | 75  | Cocamine Ethoxylate, POE-2             | 61791-14-8 | 6   | 40 CFR 180.920                       |
| <b>TOXIMUL® CA-7.5</b>             | 44  | Cocamine Ethoxylate, POE-7.5           | 61791-14-8 | 12  | 40 CFR 180.920                       |
| <b>TOXIMUL® TA-2</b>               | 82  | Tallow Amine Ethoxylate, POE-2         | 61791-26-2 | 5   | 40 CFR 180.920                       |
| <b>TOXIMUL® TA-5</b>               | 64  | Tallow Amine Ethoxylate, POE-5         | 61791-26-2 | 9   | 40 CFR 180.920                       |
| <b>TOXIMUL® TA-8</b>               | 53  | Tallow Amine Ethoxylate, POE-8         | 61791-26-2 | 11  | 40 CFR 180.920                       |
| <b>TOXIMUL® TA-15</b>              | 38  | Tallow Amine Ethoxylate, POE-15        | 61791-26-2 | 14  | 40 CFR 180.920                       |
| <b>ETHOXYLATED SORBITOL ESTERS</b> |     |  |            |     |                                      |
| <b>TOXIMUL® SEE-340</b>            | 60  | Sorbital Trioleate Ethoxylate, POE-20  | 61790-88-3 | 11  | 40 CFR 180.910 and<br>40 CFR 180.930 |
| <b>TOXIMUL® SEE-341</b>            | 38  | Sorbital Monooleate Ethoxylate, POE-20 | 9005-65-6  | 12  | 40 CFR 180.910 and<br>40 CFR 180.930 |
| <b>GLYPHOSATE SURFACTANTS</b>      |     |  |            |     |                                      |
| <b>STEPAN® 3109-6</b>              | 46  | Blend                                  | N/A        | N/A | 40 CFR 180.920                       |
| <b>TOXIMUL® 8362</b>               | 38  | Nonionic Surfactant Blend              | N/A        | 13  | 40 CFR 180.920                       |
| <b>TOXIMUL® 8363</b>               | 38  | Nonionic Surfactant Blend              | N/A        | 13  | 40 CFR 180.920                       |

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