

SOURCE: WWW.THEGOODSCENTSCOMPANY.COM

| NAME | CAS NUMBER | MOL. WEIGHT | C | H | O | DENSITY | ODOR 100% | APPEARANCE | BOILING POINT @ 760 mm Hg | MELTING POINT | ORAL TOXICITY  | DERMAL TOXICITY   | FLASH POINT | ALCOHOL SOLUBILITY |
|------|------------|-------------|---|---|---|---------|-----------|------------|---------------------------|---------------|----------------|-------------------|-------------|--------------------|
|      |            |             |   |   |   | kg/l    |           |            |                           |               | oral rat mg/kg | rabbit skin mg/kg |             |                    |

## HYDROCARBONS

## NONTERPENE HYDROCARBONS

|                                       |            |        |    |    |   |       |                                  |                                       |        |        |      |        |        |     |
|---------------------------------------|------------|--------|----|----|---|-------|----------------------------------|---------------------------------------|--------|--------|------|--------|--------|-----|
| styrene                               | 100-42-5   | 104.15 | 8  | 8  | 0 | 0.902 | balsamic                         | colorless clear liquid                | 145° C | no     | 2650 | no     | 31° C  | sol |
| naphthalene                           | 91-20-3    | 128.17 | 10 | 8  | 0 | 1.037 | pungent dry tarry                | white crystalline solid               | 218° C | 81° C  | 490  | >20000 | 79° C  | sol |
| nonane                                | 111-84-2   | 128.26 | 9  | 20 | 0 | 0.724 | gasoline                         | colorless clear liquid                | 150° C | no     | no   | no     | 31° C  | sol |
| <i>p</i> - <i>o</i> -dimethyl styrene | 1195-32-0  | 132.20 | 10 | 12 | 0 | 0.872 | phenolic                         | colorless clear liquid                | 188° C | -28° C | no   | no     | 63° C  | sol |
| <i>p</i> -cymene                      | 99-87-6    | 134.22 | 10 | 14 | 0 | 0.861 | fresh citrus terpene woody spice | colorless to pale yellow clear liquid | 177° C | no     | 4750 | no     | 47° C  | sol |
| <i>p</i> -menthatriene                | 18368-95-1 | 134.22 | 10 | 14 | 0 | 0.868 | turpentine                       |                                       | 197° C | no     | no   | no     | 54° C  | sol |
| 1-methyl naphthalene                  | 90-12-0    | 142.20 | 11 | 10 | 1 | 1.016 | naphthyl                         | pale yellow clear liquid              | 242° C | -22° C | 1840 | 7500   | 82° C  | sol |
| 2-methyl naphthalene                  | 91-57-6    | 142.20 | 11 | 10 | 1 | 1.016 |                                  | white solid                           | 241° C | 34° C  | 1630 | no     | 98° C  | sol |
| chamazulene                           | 529-05-5   | 184.28 | 14 | 16 | 0 | 0.975 |                                  | bluish green clear liquid             | 299° C | no     | no   | no     | 137° C | sol |
| vetivazulene                          | 489-84-9   | 198.30 | 15 | 18 | 0 | 0.961 |                                  | white solid                           | 304° C | 31° C  | 1550 | no     | 142° C | sol |
| ar-curcumene                          | 4176-17-4  | 202.36 | 15 | 22 | 0 | 0.873 |                                  |                                       | 276° C | no     | no   | no     | 117° C | sol |
| abietatriene                          | 19407-28-4 | 270.45 | 20 | 30 | 0 | 0.927 |                                  |                                       | 345° C | no     | no   | no     | 160° C | sol |

## MONOTERPENES

|                                 |              |        |    |    |   |       |                                   |  |        |        |      |       |       |     |
|---------------------------------|--------------|--------|----|----|---|-------|-----------------------------------|--|--------|--------|------|-------|-------|-----|
| bornylene                       | 464-17-5     | 136.23 | 10 | 16 | 0 | 0.898 |                                   | white solid                                | 147° C | 112° C | no   | no    | 25° C | sol |
| camphene                        | 79-92-5      | 136.23 | 10 | 16 | 0 | 0.880 | woody herbal fir needle           | colorless crystalline solid                | 160° C | 52° C  | 5000 | 3000  | 35° C | sol |
| (-)-camphene                    | 5794-04-7    | 136.23 | 10 | 16 | 0 | 0.880 | woody                             | colorless crystals                         | 158° C | 37° C  | no   | no    | 38° C | sol |
| (+)-camphene                    | 5794-03-6    | 136.23 | 10 | 16 | 0 | 0.880 | woody                             | colorless crystals                         | 159° C | 45° C  | no   | no    | 37° C | sol |
| <i>o</i> -2-carene              | 4497-92-1    | 136.23 | 10 | 16 | 0 | 0.879 |                                   |  |        |        | no   | no    | 38° C | sol |
| <i>o</i> -3-carene              | 13466-78-9   | 136.23 | 10 | 16 | 0 | 0.879 | sweet citrus                      | colorless clear liquid                     | 169° C | 23° C  | 4800 | no    | 46° C | sol |
| l-limonene                      | 601-029-00-7 | 136.23 | 10 | 16 | 0 | 0.834 | terpene pine herbal peppery       | colorless clear liquid                     | 177° C | no     | 5    | 5     | 53° C | sol |
| d-limonene                      | 601-029-00-7 | 136.23 | 10 | 16 | 0 | 0.834 | citrus citral fresh sweet         | colorless to pale yellow clear liquid      | 176° C | -96° C | 4400 | >4999 | 47° C | sol |
| myrcene                         | 123-35-3     | 136.23 | 10 | 16 | 0 | 0.769 | peppery terpene spicy balsam      | colorless clear liquid                     | 167° C | no     | 5    | 5     | 40° C | sol |
| <i>trans</i> - $\beta$ -ocimene | 3779-61-1    | 136.23 | 10 | 16 | 0 | 0.776 | sweet herbal                      | colorless to pale yellow clear liquid      | 175° C | no     | no   | no    | 47° C | sol |
| <i>cis</i> - $\beta$ -ocimene   | 3338-55-4    | 136.23 | 10 | 16 | 0 | 0.776 | warm floral herb flower           | colorless to pale yellow clear liquid      |        | no     | no   | no    | 57° C | sol |
| $\alpha$ -phellandrene          | 99-83-2      | 136.23 | 10 | 16 | 0 | 0.835 | citrus terpene green black pepper | colorless to pale yellow clear liquid      | 176° C | no     | 5700 | no    | 47° C | sol |
| $\beta$ -phellandrene           | 555-10-2     | 136.23 | 10 | 16 | 0 | 0.820 | mint turpentine                   | colorless to pale yellow clear liquid      | 172° C | no     | no   | no    | 44° C | sol |
| $\alpha$ -pinene                | 80-56-8      | 136.23 | 10 | 16 | 0 | 0.879 | fresh camphor earthy woody        | colorless to pale yellow clear liquid      | 156° C | -64° C | 3700 | >5000 | 32° C | sol |
| $\beta$ -pinene                 | 127-91-3     | 136.23 | 10 | 16 | 0 | 0.880 | dry woody green                   | colorless clear liquid                     | 165° C | no     | 4700 | no    | 35° C | sol |
| sabinene                        | 3387-41-5    | 136.23 | 10 | 16 | 0 | 0.880 | woody terpene citrus pine spice   | colorless to pale yellow clear liquid      | 164° C | no     | no   | no    | 37° C | sol |
| $\alpha$ -terpinene             | 99-86-5      | 136.23 | 10 | 16 | 0 | 0.845 | woody                             | colorless to pale yellow clear oily liquid | 174° C | no     | 1680 | no    | 46° C | sol |
| $\gamma$ -terpinene             | 99-85-4      | 136.23 | 10 | 16 | 0 | 0.845 | oily woody terpene herbal         | colorless clear oily liquid                | 182° C | no     | 3650 | >5000 | 52° C | sol |
| terpinolene                     | 586-62-9     | 136.23 | 10 | 16 | 0 | 0.853 | fresh woody sweet pine citrus     | colorless clear liquid                     | 185° C | no     | 4400 | >5000 | 64° C | sol |
| $\alpha$ -thujene               | 2867-05-2    | 136.23 | 10 | 16 | 0 | 0.935 | woody green herb                  | colorless clear liquid                     | 152° C | no     | no   | no    | 33° C | sol |
| tricyclene                      | 508-32-7     | 136.23 | 10 | 16 | 0 | 0.977 |                                   | colorless solid                            | 153° C | 67° C  | no   | no    | 23° C | sol |

## SESQUITERPENES

|                            |            |        |    |    |   |       |                     |  |        |    |       |       |        |     |
|----------------------------|------------|--------|----|----|---|-------|---------------------|--|--------|----|-------|-------|--------|-----|
| acoradiene                 | 24048-44-0 | 204.35 | 15 | 24 | 0 | 0.890 |                     |  | 271° C | no | no    | no    | 107° C | sol |
| $\alpha$ -amorphene        | 483-75-0   | 204.35 | 15 | 24 | 0 | 0.876 |                     |  | 272° C | no | no    | no    | 107° C | sol |
| $\gamma$ -amorphene        | 6980-46-7  | 204.35 | 15 | 24 | 0 | 0.890 |                     |  | 271° C | no | no    | no    | 107° C | sol |
| aromadendrene              | 489-39-4   | 204.35 | 15 | 24 | 0 | 0.930 | woody               |  | 259° C | no | no    | no    | 106° C | sol |
| <i>allo</i> -aromadendrene | 25246-27-9 | 204.35 | 15 | 24 | 0 | 0.930 | woody               | colorless clear liquid                     | 258° C | no | no    | no    | 120° C | sol |
| bergamotene                | 6895-56-3  | 204.35 | 15 | 24 | 0 | 0.890 |                     | pale green clear liquid                    | 260° C | no | no    | no    | 101° C | sol |
| $\alpha$ -bergamotene      | 17699-05-7 | 204.35 | 15 | 24 | 0 | 0.881 |                     | pale green clear liquid                    | 260° C | no | no    | no    | 101° C | sol |
| (E)- $\alpha$ -bergamotene | 13474-59-4 | 204.35 | 15 | 24 | 0 | 0.881 | woody warm tea      | pale green clear liquid                    | 260° C | no | no    | no    | 101° C | sol |
| (E)- $\beta$ -bergamotene  | 55123-21-2 | 204.35 | 15 | 24 | 0 | 0.890 |                     |  | 259° C | no | no    | no    | 101° C | sol |
| bisabolene                 | 495-62-5   | 204.35 | 15 | 24 | 0 | 0.867 | balsam citrus spicy | colorless to pale yellow clear oily liquid | 504° C | no | >5000 | >5000 | 102° C | sol |
| $\alpha$ -bisabolene       | 17627-44-0 | 204.35 | 15 | 24 | 0 | 0.859 | balsamic spicy      | colorless clear liquid                     | 277° C | no | no    | no    | 110° C | sol |
| (E)- $\alpha$ -bisabolene  | 25532-79-0 | 204.35 | 15 | 24 | 0 | 0.859 |                     | colorless to pale yellow clear liquid      | 276° C | no | no    | no    | 101° C | sol |

|                                   |            |        |    |    |   |       |                             |  |                 |        |       |       |         |     |
|-----------------------------------|------------|--------|----|----|---|-------|-----------------------------|--|-----------------|--------|-------|-------|---------|-----|
| (Z)- $\alpha$ -bisabolene         | 29837-07-8 | 204.35 | 15 | 24 | 0 | 0.859 |                             | colorless to pale yellow clear liquid      | 276° C          | no     | no    | no    | 110° C  | sol |
| $\beta$ -bisabolene               | 495-61-4   | 204.35 | 15 | 24 | 0 | 0.854 | balsamic                    | colorless clear liquid                     | 275° C          | no     | no    | no    | 109° C  | sol |
| bicyclosquiphellandrene           | 54324-03-7 | 204.35 | 15 | 24 | 0 | 0.890 |                             |  | 281° C          | no     | no    | no    | 111° C  | sol |
| $\beta$ -bourbonene               | 5208-59-3  | 204.35 | 15 | 24 | 0 | 0.930 | herbal woody                | colorless to pale yellow clear liquid      | 256° C          | no     | no    | no    | 104° C  | sol |
| $\alpha$ -bulnesene               | 3691-11-0  | 204.35 | 15 | 24 | 0 | 0.890 |                             |  |                 | no     | no    | no    | 108° C  | sol |
| cadalene                          | 483-78-3   | 198.30 | 15 | 18 | 0 | 0.961 |                             |  | 300° C          | no     | no    | no    | 140° C  | sol |
| cadinadiene                       | 29837-12-5 | 204.35 | 15 | 24 | 0 | 0.890 | spicy fruity mango          |  | 280° C          | no     | no    | no    | 110° C  | sol |
| cadinene                          | 29350-73-0 | 206.37 | 15 | 26 | 0 | 0.846 | fresh woody longifolone     | colorless to yellow clear liquid           | 262° C          | no     | >5000 | >5000 | >100° C | sol |
| $\alpha$ -cadinene                | 24406-05-1 | 204.35 | 15 | 24 | 0 | 0.876 | woody dry                   |  | 272° C          | no     | no    | no    | 107° C  | sol |
| $\beta$ -cadinene                 | 523-47-7   | 204.35 | 15 | 24 | 0 | 0.876 | green woody                 |  | 274° C          | no     | no    | no    | 107° C  | sol |
| $\delta$ -cadinene                | 483-76-1   | 204.35 | 15 | 24 | 0 | 0.900 | thyme herbal woody dry      |  | 280° C          | no     | no    | no    | 111° C  | sol |
| $\gamma$ -cadinene                | 39029-41-9 | 204.35 | 15 | 24 | 0 | 0.890 | herbal woody                |  | 272° C          | no     | no    | no    | 107° C  | sol |
| $\alpha$ -calacorene              | 21391-99-1 | 200.32 | 15 | 20 | 0 | 0.927 | woody                       | colorless to pale yellow clear liquid      | 290° C          | no     | no    | no    | 126° C  | sol |
| $\gamma$ -calacorene              | 24048-45-1 | 200.32 | 15 | 20 | 0 | 0.927 |                             | pale yellow crystalline solid              | 291° C          | no     | no    | no    | 127° C  | sol |
| calamenene                        | 483-77-2   | 200.32 | 15 | 20 | 0 | 0.900 | herb spice                  |  | 285° C          | no     | no    | no    | 125° C  | sol |
| caryophyllene                     | 87-44-5    | 204.35 | 15 | 24 | 0 | 0.890 | sweet woody spice clove dry | colorless clear oily liquid                | 260° C          | no     | no    | no    | 93° C   | sol |
| $\beta$ -caryophyllene            | 13877-93-5 | 204.35 | 15 | 24 | 0 | 0.890 | sweet woody spice clove dry | colorless to pale yellow clear oily liquid | 256° C          | no     | no    | no    | 96° C   | sol |
| isocaryophyllene                  | 118-65-0   | 204.35 | 15 | 24 | 0 | 0.890 | woody spicy                 |  | 267° C          | no     | no    | no    | 104° C  | sol |
| cascarilladiene                   | 59742-39-1 | 204.35 | 15 | 24 | 0 | 0.890 |                             |  | 266° C          | no     | no    | no    | 104° C  | sol |
| $\alpha$ -cedrene                 | 469-61-4   | 204.35 | 15 | 24 | 0 | 0.940 | woody cedar sweet fresh     | colorless clear oily liquid                | 262° C          | no     | no    | no    | 104° C  | sol |
| $\beta$ -cedrene                  | 546-28-1   | 204.35 | 15 | 24 | 0 | 0.930 |                             |  | 263° C          | no     | no    | no    | 110° C  | sol |
| $\alpha$ -chamigrene              | 19912-83-5 | 204.35 | 15 | 24 | 0 | 0.900 |                             |  | 273° C          | no     | no    | no    | 107° C  | sol |
| $\beta$ -chamigrene               | 18431-82-8 | 204.35 | 15 | 24 | 0 | 0.89  |                             |  | 273° C          | no     | no    | no    | 107° C  | sol |
| $\alpha$ -copaene                 | 3856-25-5  | 204.35 | 15 | 24 | 0 | 0.939 | woody spice                 | colorless clear liquid                     | 249° C          | no     | no    | no    | 43° C   | sol |
| $\alpha$ -cubebene                | 17699-14-8 | 204.35 | 15 | 24 | 0 | 0.940 | herbal waxy                 | colorless clear liquid                     | 245° C          | no     | no    | no    | >100° C | sol |
| $\beta$ -cubebene                 | 13744-15-5 | 204.35 | 15 | 24 | 0 | 0.930 | citrus fruity               | colorless to pale yellow clear liquid      | 266° C          | no     | no    | no    | 113° C  | sol |
| $\alpha$ -curcumene               | 4176-17-4  | 202.33 | 15 | 22 | 0 | 0.873 |                             |  | 276° C          | no     | no    | no    | 117° C  | sol |
| cuparene                          | 16982-00-6 | 202.33 | 15 | 22 | 0 | 0.895 |                             | colorless clear liquid                     | 268° C          | no     | no    | no    | 110° C  | sol |
| daucene                           | 16661-00-0 | 204.35 | 15 | 24 | 0 | 0.900 |                             |  | 276° C          | no     | no    | no    | 108° C  | sol |
| $\beta$ -elemene                  | 33880-83-0 | 204.35 | 15 | 24 | 0 | 0.862 | herbal waxy fresh           |  | 252° C          | no     | no    | no    | 98° C   | sol |
| eremophilene                      | 10219-75-7 | 204.35 | 15 | 24 | 0 | 0.890 |                             |  | 270° C          | no     | no    | no    | 106° C  | sol |
| farnesene                         | 502-61-4   | 204.35 | 15 | 24 | 0 | 0.807 | citrus herbal green         | pale yellow to yellow clear liquid         | 262° C          | no     | no    | no    | >100° C | sol |
| <i>trans</i> - $\beta$ -farnesene | 18794-84-8 | 204.35 | 15 | 24 | 0 | 0.807 | woody citrus sweet          | colorless clear liquid                     | 206° C          | no     | no    | no    | 110° C  | sol |
| germacrene D                      | 37839-63-7 | 204.35 | 15 | 24 | 0 | 0.850 |                             |  | 280° C          | no     | no    | no    | 112° C  | sol |
| guaiene                           | 88-84-6    | 204.35 | 15 | 24 | 0 | 0.900 | woody dry herbal            | green yellow viscous liquid                | 129° C@12 mm Hg | no     | >5000 | >5000 | 110° C  | sol |
| $\alpha$ -gurjunene               | 489-40-7   | 204.35 | 15 | 24 | 0 | 0.940 | wood balsam                 | colorless clear liquid                     | 262° C          | no     | no    | no    | 93° C   | sol |
| $\beta$ -himachalene              | 1461-03-6  | 204.35 | 15 | 24 | 0 | 0.900 |                             |  | 276° C          | no     | no    | no    | 108° C  | sol |
| $\alpha$ -humulene                | 6753-98-6  | 204.35 | 15 | 24 | 0 | 0.819 | woody                       | pale yellowish green clear liquid          | 167° C          | no     | no    | no    | 90° C   | sol |
| longicyclene                      | 1137-12-8  | 204.35 | 15 | 24 | 0 | 0.991 |                             |  | 240° C          | no     | no    | no    | 89° C   | sol |
| longifolone                       | 475-20-7   | 204.35 | 15 | 24 | 0 | 0.930 | sweet woody medical         | colorless to yellow clear oily liquid      | 255° C          | 156° C | >5000 | >5000 | >93° C  | sol |
| $\alpha$ -longipinene             | 5989-08-2  | 204.35 | 15 | 24 | 0 | 0.922 |                             |  | 252° C          | no     | no    | no    | 102° C  | sol |
| $\beta$ -maaliene                 | 489-29-2   | 204.35 | 15 | 24 | 0 | 0.950 |                             |  | 258° C          | no     | no    | no    | 98° C   | sol |
| $\alpha$ -muurolene               | 10208-80-7 | 204.35 | 15 | 24 | 0 | 0.876 | woody                       | colorless to pale yellow clear liquid      | 272° C          | no     | no    | no    | 106° C  | sol |
| $\gamma$ -muurolene               | 30021-74-0 | 204.35 | 15 | 24 | 0 | 0.890 | herbal woody spice          |  | 271° C          | no     | no    | no    | 107° C  | sol |
| $\alpha$ -patchoulene             | 560-32-7   | 204.35 | 15 | 24 | 0 | 0.940 |                             |  | 262° C          | no     | no    | no    | 110° C  | sol |
| $\beta$ -patchoulene              | 514-51-2   | 204.35 | 15 | 24 | 0 | 0.950 |                             |  | 261° C          | no     | no    | no    | 99° C   | sol |
| $\alpha$ -santalene               | 512-61-8   | 204.35 | 15 | 24 | 0 | 0.944 | woody                       | colorless to pale yellow clear liquid      | 248° C          | no     | no    | no    | 73° C   | sol |
| $\beta$ -santalene                | 511-59-1   | 204.35 | 15 | 24 | 0 | 0.890 |                             |  | 260° C          | no     | no    | no    | 101° C  | sol |
| sativene                          | 3650-28-0  | 204.35 | 15 | 24 | 0 | 0.930 |                             | colorless clear liquid                     | 256° C          | no     | no    | no    | 105° C  | sol |
| $\beta$ -selinene                 | 17066-67-0 | 204.35 | 15 | 24 | 0 | 0.880 | herbal                      |  | 262° C          | no     | no    | no    | 102° C  | sol |
| $\beta$ -sesquiphellandrene       | 20307-83-9 | 204.35 | 15 | 24 | 0 | 0.850 | herbal fruity woody         | colorless to pale yellow clear liquid      | 271° C          | no     | no    | no    | 108° C  | sol |

|               |            |        |    |    |   |       |                   |                                       |                 |    |       |       |         |     |
|---------------|------------|--------|----|----|---|-------|-------------------|---------------------------------------|-----------------|----|-------|-------|---------|-----|
| seychellene   | 20085-93-2 | 204.35 | 15 | 24 | 0 | 0.930 |                   | colorless to pale yellow clear liquid | 250° C          | no | no    | no    | 101° C  | sol |
| thujopsene    | 470-40-6   | 204.35 | 15 | 24 | 0 | 0.950 |                   | pale yellow clear liquid              | 256° C          | no | no    | no    | 106° C  | sol |
| valencene     | 4630-07-3  | 204.35 | 15 | 24 | 0 | 0.890 | citrus            | pale yellow to yellow clear liquid    | 274° C          | no | >5000 | >5000 | >110° C | sol |
| viridiflorene | 21747-46-6 | 204.35 | 15 | 24 | 0 | 0.940 |                   | colorless clear liquid                | 269° C          | no | no    | no    | 101° C  | sol |
| α-ylangene    | 14912-44-8 | 204.35 | 15 | 24 | 0 | 0.939 |                   | pale yellow clear liquid              | 249° C          | no | no    | no    | 105° C  | sol |
| α-zingiberene | 495-60-3   | 204.35 | 15 | 24 | 0 | 0.854 | spice fresh sharp | colorless clear oily liquid           | 167 °C@50 mm Hg | no | no    | no    | 107° C  | sol |

#### DITERPENES

|            |            |        |    |    |   |       |  |  |        |    |    |    |        |     |
|------------|------------|--------|----|----|---|-------|--|--|--------|----|----|----|--------|-----|
| kaurene    | 34424-57-2 | 272.48 | 20 | 32 | 0 | 0.970 |  |  | 344° C | no | no | no | 170° C | sol |
| 15-kaurene | 511-85-3   | 272.48 | 20 | 32 | 0 | 0.970 |  |  | 347° C | no | no | no | 170° C | sol |
| 16-kaurene | 562-28-7   | 272.48 | 20 | 32 | 0 | 0.970 |  |  | 347° C | no | no | no | 170° C | sol |
| sclarene   | 511-02-4   | 272.48 | 20 | 32 | 0 | 0.880 |  |  | 337° C | no | no | no | 152° C | sol |

#### HYDROCARBONS

|                      |            |        |    |    |   |       |           |                        |        |        |    |    |         |     |
|----------------------|------------|--------|----|----|---|-------|-----------|------------------------|--------|--------|----|----|---------|-----|
| octane               | 111-65-9   | 114.23 | 8  | 18 | 0 | 0.711 | gasoline  | colorless clear liquid | 126° C | -56° C | no | no | 16° C   | sol |
| nonane               | 111-84-2   | 128.26 | 9  | 20 | 0 | 0.724 | gasoline  | colorless clear liquid | 151° C | no     | no | no | 31° C   | sol |
| decane               | 124-18-5   | 142.28 | 10 | 22 | 0 | 0.734 |           | colorless clear liquid | 175° C | no     | no | no | 46° C   |     |
| undecane             | 1120-21-4  | 156.31 | 11 | 24 | 0 | 0.743 |           | colorless clear liquid | 198° C | -11° C | no | no | 60° C   | sol |
| dodecane             | 112-40-3   | 170.33 | 12 | 26 | 0 | 0.751 | alkane    | colorless clear liquid | 216° C | -26° C | no | no | 71° C   | sol |
| tridecane            | 629-50-5   | 184.36 | 13 | 28 | 0 | 0.758 |           | colorless clear liquid | 236° C | -5° C  | no | no | 79° C   | sol |
| tetradecane          | 629-59-4   | 198.39 | 14 | 30 | 0 | 0.764 | mild waxy | colorless clear liquid | 254° C | 6° C   | no | no | 99° C   | sol |
| pentadecane          | 629-62-9   | 212.41 | 15 | 32 | 0 | 0.769 | waxy      | colorless clear liquid | 271° C | 9° C   | no | no | 132° C  | sol |
| 3-methyl tetradecane | 18435-22-8 | 212.41 | 15 | 32 | 0 | 0.768 |           |                        | 265° C | no     | no | no | 89° C   | sol |
| hexadecane           | 544-76-3   | 226.44 | 16 | 34 | 0 | 0.773 |           |                        | 287° C | 20° C  | no | no | 135° C  | sol |
| heptadecane          | 629-78-7   | 240.47 | 17 | 36 | 0 | 0.777 |           |                        | 300° C | 21° C  | no | no | 149° C  | sol |
| octadecane           | 593-45-3   | 254.49 | 18 | 38 | 0 | 0.781 |           | white solid            | 317° C | 29° C  | no | no | 166° C  | sol |
| nonadecane           | 629-92-5   | 268.52 | 19 | 40 | 0 | 0.784 | waxy      | white solid            | 330° C | 32° C  | no | no | 168° C  | sol |
| eicosane             | 112-95-8   | 282.55 | 20 | 42 | 0 | 0.787 | waxy      | white solid            | 343° C | 37° C  | no | no | >110° C | sol |
| heneicosane          | 629-94-7   | 296.57 | 21 | 44 | 0 | 0.790 | waxy      | white solid            | 357° C | 40° C  | no | no | 199° C  | sol |
| docosane             | 629-97-0   | 310.60 | 22 | 46 | 0 | 0.792 | waxy      | white solid            | 369° C | 44° C  | no | no | >110° C | sol |
| tricosane            | 638-67-5   | 324.63 | 23 | 48 | 0 | 0.795 | waxy      | white solid            | 390° C | 48° C  | no | no | >110° C | sol |
| tetracosane          | 646-31-1   | 338.65 | 24 | 50 | 0 | 0.797 | waxy      | white solid            | 392° C | 54° C  | no | no | >110° C | sol |
| pentacosane          | 629-99-2   | 352.68 | 25 | 52 | 0 | 0.799 |           | white solid            | 402° C | 54° C  | no | no | >110° C | sol |
| hexacosane           | 630-01-3   | 366.71 | 26 | 54 | 0 | 0.801 | waxy      | white solid            | 412° C | 58° C  | no | no | 257° C  | sol |
|                      |            |        |    |    |   | 27    | 56        | 0                      |        |        |    |    |         |     |
| octacosane           | 630-02-4   | 394.76 | 28 | 58 | 0 | 0.804 |           | white solid            | 432° C | 63° C  | no | no | 280° C  | sol |
| nonacosane           | 630-03-5   | 408.79 | 29 | 60 | 0 | 0.805 | waxy      | white solid            | 441° C | 64° C  | no | no | 291° C  | sol |

#### ALCOHOLS

##### SATURATED ALCOHOLS

|                     |           |        |   |    |   |       |                                   |                                       |        |         |      |       |       |     |
|---------------------|-----------|--------|---|----|---|-------|-----------------------------------|---------------------------------------|--------|---------|------|-------|-------|-----|
| ethanol             | 64-17-5   | 46.07  | 2 | 6  | 1 | 0.780 | strong alcoholic ethereal medical | colorless clear liquid                | 78° C  | no      | 7060 | 20000 | 9° C  | sol |
| propyl alcohol      | 71-23-8   | 60.10  | 3 | 8  | 1 | 0.795 | alcoholic                         | colorless clear liquid                | 97° C  | no      | 1870 |       | 15° C | sol |
| isopropyl alcohol   | 67-63-0   | 60.10  | 3 | 8  | 1 | 0.791 | alcoholic                         | colorless clear liquid                | 83° C  | no      | 5300 | 12800 | 12° C | sol |
| butyl alcohol       | 71-36-3   | 74.12  | 4 | 10 | 1 | 0.805 | fermented                         | colorless clear liquid                | 118° C | no      | 790  | 3400  | 35° C | sol |
| isobutyl alcohol    | 78-83-1   | 74.12  | 4 | 10 | 1 | 0.801 | ethereal                          | colorless clear liquid                | 108° C | no      | 2460 | 3400  | 28° C | sol |
| 2-butanol           | 78-92-2   | 74.12  | 4 | 10 | 1 | 0.801 | sweet apricot                     | colorless clear liquid                | 99° C  | no      | 2193 | >2000 | 27° C | sol |
| amyl alcohol        | 71-41-0   | 88.15  | 5 | 12 | 1 | 0.811 | fermented                         | colorless to pale yellow clear liquid | 137° C | -78° C  | 5660 | 2830  | 49° C | sol |
| isoamyl alcohol     | 123-51-3  | 88.15  | 5 | 12 | 1 | 0.809 | fermented                         | colorless to pale yellow clear liquid | 132° C | -116° C | 1300 | 3970  | 46° C | sol |
| 2-pentanol          | 6032-29-7 | 88.15  | 5 | 12 | 1 | 0.809 | fermented                         | colorless clear liquid                | 119° C | no      | 2820 | no    | 34° C | sol |
| 3-methyl-2-butanol  | 598-75-4  | 88.15  | 5 | 12 | 1 | 0.806 | fruity                            | colorless clear liquid                | 113° C | no      | no   | no    | 27° C | sol |
| 2-methyl-1-butanol  | 137-32-6  | 88.15  | 5 | 12 | 1 | 0.809 | fruity                            | colorless clear liquid                | 129° C | no      | no   | 3540  | 43° C | sol |
| hexanol             | 111-27-3  | 102.17 | 6 | 14 | 1 | 0.816 | herbal                            | colorless clear liquid                | 156° C | no      | 720  | 3100  | 60° C | sol |
| 2-hexanol           | 626-93-7  | 102.17 | 6 | 14 | 1 | 0.814 |                                   | colorless clear liquid                | 137° C | no      | no   | no    | 46° C | sol |
| 3-hexanol           | 623-37-0  | 102.17 | 6 | 14 | 1 | 0.814 | alcoholic                         | colorless clear liquid                | 134° C | no      | no   | no    | 42° C | sol |
| 3-methyl-2-pentanol | 565-60-6  | 102.17 | 6 | 14 | 1 | 0.811 |                                   | colorless clear liquid                | 134° C | no      | no   | no    | 41° C | sol |
| 2-ethyl-4-butanol   | 589-35-5  | 102.17 | 6 | 14 | 1 | 0.814 | fermented                         | colorless clear liquid                | 152° C | no      | no   | no    | 59° C | sol |
| heptanol            | 111-70-6  | 110.15 | 7 | 10 | 1 | 0.820 | green                             | colorless clear liquid                | 175° C | no      | 500  | 2000  | 74° C | sol |
| octanol             | 111-87-5  | 130.23 | 8 | 18 | 1 | 0.823 | waxy                              | colorless clear liquid                | 195° C | -16° C  | 3200 | 1000  | 81° C | sol |
| 2-octanol           | 123-96-6  | 130.23 | 8 | 18 | 1 | 0.821 | spicy                             | colorless clear oily liquid           | 180° C | -37° C  | 3200 | no    | 71° C | sol |

|                     |            |        |    |    |   |       |                          |                                       |        |        |        |        |         |     |
|---------------------|------------|--------|----|----|---|-------|--------------------------|---------------------------------------|--------|--------|--------|--------|---------|-----|
| 3-octanol           | 589-98-0   | 130.23 | 8  | 18 | 1 | 0.821 | earthy                   | colorless clear liquid                | 175° C | no     | >5000  | >5000  | 66° C   | sol |
| 6-methyl-3-heptanol | 18720-66-6 | 130.23 | 8  | 18 | 1 | 0.819 |                          | colorless clear liquid                | 170° C | no     | no     | no     | 64° C   | sol |
| 2-ethyl-1-hexanol   | 104-76-7   | 130.23 | 8  | 18 | 1 | 0.821 | citrus fresh floral      | colorless to pale yellow clear liquid | 185° C | no     | 3730   | 1970   | 77° C   | sol |
| nonanol             | 143-08-8   | 144.25 | 9  | 20 | 1 | 0.826 | fresh clean fatty floral | colorless to pale yellow clear liquid | 214° C | -7° C  | 3560   | 5660   | 98° C   | sol |
| 2-nonanol           | 628-99-9   | 144.25 | 9  | 20 | 1 | 0.824 | waxy                     | colorless clear oily liquid           | 193° C | -36° C | no     | no     | 82° C   | sol |
| decanol             | 112-30-1   | 158.28 | 10 | 22 | 1 | 0.828 | fatty waxy floral        | colorless clear oily liquid           | 231° C | 7° C   | 4720   | 3560   | 83° C   | sol |
| undecanol           | 112-42-5   | 172.31 | 11 | 24 | 1 | 0.829 | fresh waxy               | colorless clear oily liquid           | 243° C | 12° C  | 3000   | 4760   | >110° C | sol |
| 2-undecanol         | 1653-30-1  | 172.31 | 11 | 24 | 1 | 0.828 | fruity                   | colorless clear oily liquid           | 232° C | -10° C | no     | no     | 97° C   | sol |
| dodecanol           | 112-53-8   | 186.33 | 12 | 26 | 1 | 0.831 | waxy                     | colorless clear oily liquid           | 261° C | 24° C  | >12800 | >10000 | >110° C | sol |
| 2-tridecanol        | 1653-31-2  | 200.36 | 13 | 28 | 1 | 0.831 |                          |                                       | 257° C | 23° C  | no     | no     | 102° C  | sol |
| 1-pentadecanol      | 629-76-5   | 228.41 | 15 | 32 | 1 | 0.834 |                          | white solid                           | 299° C | 44° C  | no     | no     | 130° C  | sol |
| hexadecanol         | 36653-82-4 | 242.44 | 16 | 34 | 1 | 0.835 | waxy floral              | white solid                           | 344° C | 53° C  | 5000   | >2600  | 135° C  | sol |

#### UNSATURATED ALCOHOLS

|                       |            |        |    |    |   |       |                         |                                       |                  |    |       |       |        |     |
|-----------------------|------------|--------|----|----|---|-------|-------------------------|---------------------------------------|------------------|----|-------|-------|--------|-----|
| 2-penten-1-ol         | 20273-24-9 | 86.13  | 5  | 10 | 1 | 0.842 | green                   | colorless clear liquid                | 140° C           | no | no    | no    | 48° C  | sol |
| (Z)-2-penten-1-ol     | 1576-95-0  | 86.13  | 5  | 10 | 1 | 0.842 | green                   | colorless to pale yellow clear liquid | 138° C           | no | no    | no    | 48° C  | sol |
| 1-penten-3-ol         | 616-25-1   | 86.13  | 5  | 10 | 1 | 0.827 | green                   | colorless to pale yellow clear liquid | 114° C           | no | no    | no    | 25° C  | sol |
| 2-methyl-3-buten-2-ol | 115-18-4   | 86.13  | 5  | 10 | 1 | 0.830 | herbal earthy oily      | colorless clear liquid                | 99° C            | no | no    | no    | 13° C  | sol |
| 2-methyl-3-buten-1-ol | 4516-90-9  | 86.13  | 5  | 10 | 1 | 0.827 |                         | colorless clear liquid                | 120° C           | no | no    | no    | 33° C  | sol |
| 2-methyl-2-buten-1-ol | 4675-87-0  | 86.13  | 5  | 10 | 1 | 0.844 | green oily              | colorless clear liquid                | 137° C           | no | no    | no    | 50° C  | sol |
| 2-hexen-1-ol          | 2305-21-7  | 100.16 | 6  | 12 | 1 | 0.843 | fruity green leafy      | colorless to pale yellow clear liquid | 159° C           | no | no    | no    | 62° C  | sol |
| (E)-2-hexen-1-ol      | 928-95-0   | 100.16 | 6  | 12 | 1 | 0.843 | green                   | colorless to pale yellow clear liquid | 159° C           | no | 3500  | 4500  | 54° C  | sol |
| (Z)-2-hexen-1-ol      | 928-94-9   | 100.16 | 6  | 12 | 1 | 0.843 | green                   | colorless clear liquid                | 166° C           | no | no    | no    | 70° C  | sol |
| 3-hexen-1-ol          | 544-12-7   | 100.16 | 6  | 12 | 1 | 0.843 | green leafy             | colorless to pale yellow clear liquid | 156° C           | no | no    | no    | 54° C  | sol |
| (E)-3-hexen-1-ol      | 928-97-2   | 100.16 | 6  | 12 | 1 | 0.843 | green                   | colorless clear liquid                | 156° C           | no | no    | no    | 59° C  | sol |
| (Z)-3-hexen-1-ol      | 928-96-1   | 100.16 | 6  | 12 | 1 | 0.843 | green                   | colorless clear liquid                | 156° C           | no | 4700  | >5000 | 44° C  | sol |
| (Z)-4-hexen-1-ol      | 928-91-6   | 100.16 | 6  | 12 | 1 | 0.843 | green                   | colorless clear liquid                | 159° C           | no | no    | no    | 61° C  | sol |
| 1-hexen-3-ol          | 4798-44-1  | 100.17 | 6  | 12 | 1 | 0.830 | ethereal                | colorless clear liquid                | 135° C           | no | no    | no    | 34° C  | sol |
| 1-hepten-3-ol         | 4938-52-7  | 114.19 | 7  | 14 | 1 | 0.833 | green                   | colorless to pale yellow clear liquid | 154° C           | no | no    | no    | 54° C  | sol |
| 2-octen-1-ol          | 22104-78-5 | 128.21 | 8  | 16 | 1 | 0.845 | green vegetable         | colorless clear liquid                | 195° C           | no | no    | no    | 78° C  | sol |
| (E)-2-octen-1-ol      | 18409-17-1 | 128.21 | 8  | 16 | 1 | 0.845 | green                   | colorless clear liquid                | 195° C           | no | no    | no    | 85° C  | sol |
| (Z)-5-octen-1-ol      | 64275-73-6 | 128.21 | 8  | 16 | 1 | 0.845 | green                   | colorless clear liquid                | 95° C@25 mm Hg   | no | >5000 | no    | 85° C  | sol |
| 1-octen-3-ol          | 3391-86-4  | 128.21 | 8  | 16 | 1 | 0.834 | earthy                  | colorless to pale yellow clear liquid | 175° C           | no | 340   | 3300  | 61° C  | sol |
| (E)-2-nonen-1-ol      | 31502-14-4 | 142.24 | 9  | 18 | 1 | 0.845 | waxy green violet melon | colorless clear liquid                | 110° C@17 mm Hg  | no | no    | no    | 102° C | sol |
| (Z)-2-nonen-1-ol      | 41453-56-9 | 142.24 | 9  | 18 | 1 | 0.845 | waxy green              | colorless clear liquid                | 96° C@10 mm Hg   | no | no    | no    | 95° C  | sol |
| (Z)-3-nonen-1-ol      | 10340-23-5 | 142.24 | 9  | 18 | 1 | 0.845 | waxy green              | colorless clear liquid                | 108° C@20 mm Hg  | no | no    | no    | 62° C  | sol |
| 2-dodecen-1-ol        | 22104-81-0 | 184.32 | 12 | 24 | 1 | 0.846 | fatty                   | colorless clear liquid                | 110° C @ 1 mm Hg | no | no    | no    | 110° C | sol |

|                          |            |        |    |    |   |       |                                   |   |                 |        |       |       |         |     |
|--------------------------|------------|--------|----|----|---|-------|-----------------------------------|---|-----------------|--------|-------|-------|---------|-----|
| benzyl alcohol           | 100-51-6   | 108.14 | 7  | 8  | 1 | 1.047 | floral                            | colorless clear oily liquid                         | 205° C          | -16° C | 1230  | 2000  | 101° C  | sol |
| <i>m</i> -cresol         | 108-39-4   | 108.14 | 7  | 8  | 1 | 1.038 | phenolic                          | white to amber liquid to crystals                   | 203° C          | 11° C  | 242   | 2050  | 86° C   | sol |
| <i>p</i> -cresol         | 106-44-5   | 108.14 | 7  | 8  | 1 | 1.038 | phenolic                          | white crystals                                      | 202° C          | 34° C  | 207   | 750   | 89° C   | sol |
| phenethyl alcohol        | 60-12-8    | 122.16 | 8  | 10 | 1 | 1.020 | floral                            | colorless clear oily liquid                         | 221° C@740 mmHg | -26° C | 1790  | >5000 | 102° C  | sol |
| guaiaicol                | 90-05-1    | 124.14 | 7  | 8  | 2 | 1.109 | phenolic                          | colorless to pale yellow clear oily liquid to solid | 205° C          | 30° C  | 520   | 4600  | 82° C   | sol |
| chavicol                 | 501-92-8   | 134.17 | 9  | 10 | 1 | 1.014 | phenolic medicinal                | colorless clear liquid                              | 237° C          | 16° C  | no    | no    | 102° C  | sol |
| cinnamyl alcohol         | 104-54-1   | 134.17 | 9  | 10 | 1 | 1.048 | sweet balsam hyacinth spicy green | pale yellow solid                                   | 254° C          | 34° C  | 2000  | >5000 | >93° C  | sol |
| (E)-cinnamyl alcohol     | 4407-36-7  | 134.17 | 9  | 10 | 1 | 1.048 | sweet balsam                      | white to pale yellow solid                          | 248° C          | 34° C  | no    | no    | 93° C   | sol |
| 3-phenyl propyl alcohol  | 122-97-4   | 136.19 | 9  | 12 | 1 | 0.999 | balsamic                          | colorless clear oily liquid                         | 235° C          | -17° C | 2300  | >5000 | 109° C  | sol |
| <i>p</i> -anisyl alcohol | 105-13-5   | 138.16 | 8  | 10 | 2 | 1.085 | powdery                           | white to pale yellow liquid to solid                | 259° C          | 24° C  | 1200  | 3000  | 110° C  | sol |
| 2,6-nonadien-1-ol        | 7786-44-9  | 140.22 | 9  | 16 | 1 | 0.866 | green                             | colorless to pale yellow clear oily liquid          | 195° C          | no     | >5000 | >5000 | 80° C   | sol |
| <i>trans</i> -anethol    | 4180-23-8  | 148.20 | 10 | 12 | 1 | 0.959 | sweet anise licorice mimosa       | white colorless crystals                            | 236° C          | 23° C  | 2090  | >5000 | 91° C   | sol |
| <i>cis</i> -anethol      | 25679-28-1 | 148.20 | 10 | 12 | 1 | 0.959 | anise                             |   |                 |        | 150   | no    | no      | sol |
| thymol                   | 89-83-8    | 150.22 | 10 | 14 | 1 | 0.974 | herbal phenolic medical camphor   | white crystalline solid                             | 231° C          | 50° C  | 980   | no    | 102° C  | sol |
| carvacrol                | 499-75-2   | 150.22 | 10 | 14 | 1 | 0.974 | spice woody camphor thymol        | colorless to yellow clear viscous liquid            | 237° C          | 4° C   | 810   | 2700  | 107° C  | sol |
| cuminyl alcohol          | 536-60-7   | 150.22 | 10 | 14 | 1 | 0.979 | spicy                             | colorless to pale yellow clear liquid               | 247° C          | no     | 1020  | 2500  | 93° C   | sol |
| perilla alcohol          | 536-59-4   | 152.23 | 10 | 16 | 1 | 0.940 | green                             | colorless to pale yellow clear liquid               | 92° C           | no     | 2100  | >5000 | >110° C | sol |
| sabinol                  | 471-16-9   | 152.23 | 10 | 16 | 1 | 1.000 |                                   | colorless clear liquid                              | 208° C          | no     | no    | no    | 84° C   | sol |
| myrtenol                 | 515-00-4   | 152.23 | 10 | 16 | 1 | 0.991 | herbal                            | colorless clear liquid                              | 222° C          | no     | no    | no    | 89° C   | sol |
| (E)-carveol              | 1197-07-5  | 152.23 | 10 | 16 | 1 | 0.949 | caraway solvent spearmint         | colorless clear liquid                              | 231° C          | no     | no    | no    | 91° C   | sol |
| (Z)-carveol              | 1197-06-4  | 152.23 | 10 | 16 | 1 | 0.949 | caraway                           | colorless clear liquid                              |                 | no     | no    | no    | no      | sol |

|                                  |            |        |    |    |   |       |                                  |   |                  |         |       |       |         |     |
|----------------------------------|------------|--------|----|----|---|-------|----------------------------------|---|------------------|---------|-------|-------|---------|-----|
| <i>l</i> -carveol                | 99-48-9    | 152.23 | 10 | 16 | 1 | 0.949 | minty                            | colorless to pale yellow clear liquid         | 226° C           | no      | 3000  | >5000 | 98° C   | sol |
| verbenol                         | 473-67-6   | 152.23 | 10 | 16 | 1 | 1.002 | balsamic                         | white to pale yellow crystalline solid        | 214° C           | 57° C   | no    | no    | 85° C   | sol |
| (E)-verbenol                     | 1820-09-3  | 152.23 | 10 | 16 | 1 | 1.002 |                                  | white to colorless solid to liquid            | 215° C           | 23° C   | no    | no    | 84° C   | sol |
| (Z)-verbenol                     | 1845-30-3  | 152.23 | 10 | 16 | 1 | 1.002 |                                  | white crystals                                | 215° C           | 71° C   | no    | no    | 84° C   | sol |
| artemisiyl alcohol               | 29887-38-5 | 154.25 | 10 | 18 | 1 | 0.856 | herbal                           | colorless to pale yellow clear loily liquid   | 215° C           | no      | no    | no    | 78° C   | sol |
| borneol                          | 507-70-0   | 154.25 | 10 | 18 | 1 | 0.992 | pine woody camphor               | white powder                                  | 213° C           | 207° C  | 500   | no    | 66° C   | sol |
| d-borneol                        | 464-43-7   | 154.25 | 10 | 18 | 1 | 0.992 | balsamic                         | white crystalline powder                      | 212° C           | 208° C  | 2000  | no    | 66° C   | sol |
| l-borneol                        | 464-45-9   | 154.25 | 10 | 18 | 1 | 0.992 | balsamic                         | colorless crystals                            | 204° C?          | 206° C? | 5800  | no    | 66° C   | sol |
| isoborneol                       | 124-76-5   | 154.25 | 10 | 18 | 1 | 0.992 | balsamic                         | white crystalline solid                       | 214° C           | 214° C  | 5200  | >5000 | 93° C   | sol |
| $\alpha$ -campholenic alcohol    | 1901-38-8  | 154.25 | 10 | 18 | 1 | 0.889 | camphoreous                      | colorless clear liquid                        | 208° C           | no      | no    | no    | 78° C   | sol |
| 4-carvomenthenol (terpinen-4-ol) | 562-74-3   | 154.25 | 10 | 18 | 1 | 0.933 | pepper woody earth musty sweet   | pale yellow clear liquid                      | 212° C           | no      | 1300  | >2500 | 79° C   | sol |
| 1,4-cineole                      | 470-67-7   | 154.25 | 10 | 18 | 1 | 0.977 | herbal                           | colorless clear liquid                        | 172° C           | no      | 3870  | >5000 | 48° C   | sol |
| 1,8-cineole                      | 470-82-6   | 154.25 | 10 | 18 | 1 | 0.922 | eucalyptus camphor               | colorless clear liquid                        | 177° C           | 2° C    | 2480  | 5000  | 50° C   | sol |
| geraniol                         | 106-24-1   | 154.25 | 10 | 18 | 1 | 0.866 | sweet floral fruity rose waxy    | colorless clear liquid                        | 230° C           | 16° C   | 3600  | >5000 | 93° C   | sol |
| lavandulol                       | 58461-27-1 | 154.25 | 10 | 18 | 1 | 0.857 | delicate farnesol-like           | colorless to pale yellow clear liquid         | 230° C           | no      | no    | no    | 88° C   | sol |
| linalool                         | 78-70-6    | 154.25 | 10 | 18 | 1 | 0.858 | citrus floral sweet woody green  | colorless clear liquid                        | 196° C           | no      | 2790  | 5610  | 76° C   | sol |
| myrcenol                         | 543-39-5   | 154.25 | 10 | 18 | 1 | 0.851 | floral                           | colorless to pale yellow clear liquid         | 225° C           | no      | 5300  | >5000 | 89° C   | sol |
| myrtanol                         | 514-99-8   | 154.25 | 10 | 18 | 1 | 0.950 |                                  | white to pale yellow solid                    | 215° C           | no      | no    | no    | 96° C   | sol |
| nerol                            | 106-25-2   | 154.25 | 10 | 18 | 1 | 0.866 | sweet citrus                     | colorless clear liquid                        | 226° C           | no      | 4500  | >5000 | 108° C  | sol |
| $\alpha$ -terpineol              | 98-55-5    | 154.25 | 10 | 18 | 1 | 0.934 | floral                           | colorless viscous liquid to solid             | 216° C           | 41° C   | 4300  | 3000  | 88° C   | sol |
| $\beta$ -terpineol               | 138-87-4   | 154.25 | 10 | 18 | 1 | 0.921 | woody                            | colorless clear liquid                        | 210° C           | no      | no    | no    | 87° C   | sol |
| $\delta$ -terpineol              | 7299-42-5  | 154.25 | 10 | 18 | 1 | 0.910 |                                  | colorless to pale yellow liquid to solid      | 218° C           | no      | no    | no    | 84° C   | sol |
| $\gamma$ -terpineol              | 586-81-2   | 154.25 | 10 | 18 | 1 | 0.941 | terpineol lilac                  | colorless to pale yellow clear viscous liquid | 219° C           | no      | no    | no    | 88° C   | sol |
| thujyl alcohol                   | 21653-20-3 | 154.25 | 10 | 18 | 1 | 1.019 | carvomenthol                     | colorless crystals                            | 100° C@12 mm Hg  | 28° C   | no    | no    | 83° C   | sol |
| yomogi alcohol                   | 30458-12-9 | 154.25 | 10 | 18 | 1 | 0.857 |                                  |   | 213° C           | no      | no    | no    | 78° C   | sol |
| citronellol                      | 106-22-9   | 156.26 | 10 | 20 | 1 | 0.845 | floral leather waxy citrus       | colorless to pale yellow clear liquid         | 225° C           | no      | 3450  | 2650  | 93° C   | sol |
| (±)-citronellol                  | 26489-01-0 | 156.26 | 10 | 20 | 1 | 0.845 | sweet rose leather musty floral  | colorless to pale yellow liquid               | 225° C           | no      | 3450  | 2650  | 93° C   | sol |
| <i>l</i> -citronellol            | 7540-51-4  | 156.26 | 10 | 20 | 1 | 0.845 | floral rose geranium             | colorless clear liquid                        | 225° C           | no      | 3450  | 2650  | 102° C  | sol |
| carvomenthol                     | 499-69-4   | 156.26 | 10 | 20 | 1 | 0.890 |                                  |   | 222° C           | no      | no    | no    | 87° C   | sol |
| safrole                          | 94-59-7    | 162.18 | 10 | 10 | 2 | 1.118 | sweet warm spicy woody floral    | colorless to pale yellow clear liquid         | 233° C           | 11° C   | 1950  | >5000 | 98° C   | sol |
| eugenol                          | 97-53-0    | 164.20 | 10 | 12 | 2 | 1.050 | sweet spicy clove woody          | pale yellow to dark yellow clear liquid       | 252° C           | 10° C   | 1930  | no    | 93° C   | sol |
| isoeugenol                       | 97-54-1    | 164.20 | 10 | 12 | 2 | 1.074 | sweet spicy woody floral         | colorless to yellow clear liquid              | 267° C           | 14° C   | 1560  | no    | >100° C |     |
| methyl isoeugenol                | 93-16-3    | 178.23 | 11 | 14 | 2 | 0.998 | spicy clove woody                | colorless to pale yellow clear liquid         | 263° C           | 16° C   | 2500  | >5000 | >110° C | sol |
| myristicin                       | 607-91-0   | 192.21 | 11 | 12 | 3 | 1.137 | spice warm balsam woody          | colorless clear liquid                        | 173° C@40 mm Hg  | no      | 4260  | no    | 90° C   | sol |
| caryophyllene alcohol            | 56747-96-7 | 208.34 | 14 | 24 | 1 | 1.004 | spicy moss earthy                | colorless clear liquid                        | 282° C           | no      | >5000 | >5000 | 118° C  | sol |
| $\alpha$ -caryophyllene alcohol  | 4586-22-5  | 208.34 | 14 | 24 | 1 | 1.001 | woody spicy earthy               | white crystals                                | 150° C           | 117° C  | no    | no    | 120° C  | sol |
| $\beta$ -caryophyllene alcohol   | 472-97-9   | 208.34 | 14 | 24 | 1 | 1.011 | warm woody moss spicy earthy     | white crystals                                | 292° C           | 95° C   | no    | no    | 123° C  | sol |
| santalol                         | 11031-45-1 | 220.35 | 15 | 24 | 1 | 0.888 | woody                            | colorless to pale yellow clear viscous liquid | 302° C           | no      | no    | no    | >100° C | sol |
| $\alpha$ -santalol               | 115-71-9   | 220.35 | 15 | 24 | 1 | 1.030 |                                  |   |                  |         |       |       |         |     |
| cedrenol                         | 28231-03-0 | 220.35 | 15 | 24 | 1 | 1.020 | woody                            | yellow crystals                               | 169° C@9.5 mm Hg | 83° C   | >5000 | >5000 | 98° C   | sol |
| vetiverol                        | 89-88-3    | 220.35 | 15 | 24 | 1 | 0.964 | woody                            | yellow to pale green clear viscous liquid     |                  | 70° C   | no    | no    | >100° C | sol |
| acoragermacrone                  | 50281-45-3 | 220.35 | 15 | 24 | 1 | 0.886 |                                  |   | 321° C           | no      | no    | no    | 147° C  | sol |
| apiole                           | 523-80-8   | 222.24 | 12 | 14 | 4 | 1.151 | parsley faint                    | colorless to yellow green clear liquid        | 295° C           | 56° C   | no    | no    | no      | sol |
| agarospirol                      | 23811-08-7 | 222.37 | 15 | 26 | 1 | 0.960 | spicy peppery woody              |   | 312° C           | 57° C   | no    | no    | 114° C  | sol |
| $\beta$ -acorenonol              | 28400-11-5 | 222.37 | 15 | 26 | 1 | 0.960 |                                  |   | 310° C           | no      | no    | no    | 114° C  | sol |
| bisabolol                        | 515-69-5   | 222.37 | 15 | 26 | 1 | 0.922 | mild floral peppery note         | colorless clear viscous liquid                | 315° C           | no      | >5000 | no    | 110° C  | sol |
| $\beta$ -bisabolol               | 15352-77-9 | 222.37 | 15 | 26 | 1 | 0.921 | citrus floral fresh sweet herbal | colorless clear viscous liquid                | 306° C           | no      | no    | no    | 131° C  | sol |
| bulnesol                         | 22451-73-6 | 222.37 | 15 | 26 | 1 | 0.960 | spicy                            |   | 138° C           | 70° C   | no    | no    | 116° C  | sol |
| $\alpha$ -cadinol                | 481-34-5   | 222.37 | 15 | 26 | 1 | 0.937 | herb wood                        | pale yellow crystalline solid                 | 303° C           | 75° C   | no    | no    | 128° C  | sol |
| $\delta$ -cadinol                | 36564-42-8 | 222.37 | 15 | 26 | 1 | 0.937 | herbal                           |   | 303° C           | no      | no    | no    | 128° C  | sol |
| $\Gamma$ -cadinol                | 5937-11-1  | 222.37 | 15 | 26 | 1 | 0.937 | pure odorless - mixtures earthy  | white crystalline solid                       | 303° C           | 140° C  | no    | no    | 128° C  | sol |
| carotol                          | 465-28-1   | 222.37 | 15 | 26 | 1 | 0.973 | pleasant mild                    |   | 295° C           | no      | no    | no    | 126° C  | sol |
| cedrol                           | 77-53-2    | 222.37 | 15 | 26 | 1 | 1.000 | woody                            | white crystals                                | 273° C           | 84° C   | no    | >5000 | 81° C   | sol |
| cubebol                          | 23445-02-5 | 222.37 | 15 | 26 | 1 | 1.000 |                                  |   | 280° C           | 62° C   | no    | no    | 117° C  | sol |
| (-)-cubebol                      | 21284-22-0 | 222.37 | 15 | 26 | 1 | 0.952 | spicy herbal green tea           |   | 301° C           | no      | no    | no    | 128° C  | sol |

|                   |            |        |    |    |   |       |                                |  |                 |        |       |       |         |     |
|-------------------|------------|--------|----|----|---|-------|--------------------------------|--|-----------------|--------|-------|-------|---------|-----|
| elemol            | 8024-27-9  | 222.37 | 15 | 26 | 1 | 0.937 |                                | pale yellow to yellow crystals or solid    | 290° C          | 51° C  | no    | no    | 99° C   | sol |
| α-elemol          | 639-99-6   | 222.37 | 15 | 26 | 1 | 0.932 | green woody sweet              | pale yellow to yellow crystals or solid    | 290° C          | 51° C  | no    | no    | 99° C   | sol |
| β-elemol          | 32142-08-8 | 222.37 | 15 | 26 | 1 | 0.937 |                                |  | 290° C          |        | no    | no    | 99° C   | sol |
| farnesol          | 4602-84-0  | 222.37 | 15 | 26 | 1 | 0.875 | mild fresh sweet floral        | colorless to pale yellow clear oily liquid | 263° C          | no     | 6     | no    | 96° C   | sol |
| ledol             | 577-27-5   | 222.37 | 15 | 26 | 1 | 0.962 |                                | colorless crystals                         | 293° C          | 104° C | no    | no    | 123° C  | sol |
| nerolidol         | 7212-44-4  | 222.37 | 15 | 26 | 1 | 0.869 | floral                         | colorless to pale yellow clear oily liquid | 114° C@1 mm Hg  | no     | >5000 | >5000 | 96° C   | sol |
| (E)-nerolidol     | 40716-66-3 | 222.37 | 15 | 26 | 1 | 0.869 | floral                         | colorless to pale yellow clear liquid      | 277° C          | no     | no    | no    | >110° C | sol |
| (Z)-nerolidol     | 3790-78-1  | 222.37 | 15 | 26 | 1 | 0.869 | floral                         |  | no              | no     | no    | no    | no      | sol |
| patchouli alcohol | 5986-55-0  | 222.37 | 15 | 26 | 1 | 1.001 | odorless                       | colorless to pale yellow crystalline solid | 287° C          | 56° C  | no    | no    | 102° C  | sol |
| valerianol        | 20489-45-6 | 222.37 | 15 | 26 | 1 | 0.960 |                                |  | 310° C          | no     | no    | no    | 113° C  | sol |
| widdrol           | 6892-80-4  | 222.37 | 15 | 26 | 1 | 0.960 |                                | colorless solid                            | 303° C          | 98° C  | no    | no    | 128° C  | sol |
| viridiflorol      | 552-02-3   | 222.37 | 15 | 26 | 1 | 0.962 | herbal                         | yellow solid                               | 394° C          | 75° C  | no    | no    | 123° C  | sol |
| phytol            | 150-86-7   | 296.53 | 20 | 40 | 1 | 0.845 | delicate floral balsam         | colorless clear liquid                     | 334° C          | no     | >5000 | >5000 | >100° C | sol |
| sclareol          | 515-03-7   | 308.50 | 20 | 36 | 2 | 0.954 | sweet balsam clary amber woody | amber solid                                | 220° C@19 mm Hg | 98° C  | >5000 | >5000 | no      | sol |

#### HYDRATES

|                      |            |        |    |    |   |       |                       |  |        |        |    |    |       |     |
|----------------------|------------|--------|----|----|---|-------|-----------------------|--|--------|--------|----|----|-------|-----|
| camphene hydrate     | 465-31-6   | 154.25 | 10 | 18 | 1 | 0.969 | menthol musty camphor | colorless to pale yellow crystalline solid | 250° C | 105° C | no | no | 81° C | sol |
| sabinene hydrate     | 546-79-2   | 154.25 | 10 | 18 | 1 | 1.030 | herbal                | white crystals                             | 200° C | no     | no | no | 80° C | sol |
| (E)-sabinene hydrate | 17699-16-0 | 154.25 | 10 | 18 | 1 | 1.030 | woody balsam          | colorless to pale yellow clear liquid      | 202° C | no     | no | no | 80° C | sol |
| (Z)-sabinene hydrate | 15537-55-0 | 154.25 | 10 | 18 | 1 | 1.030 | balsam                | colorless to pale yellow clear liquid      | 202° C | no     | no | no | 80° C | sol |

#### KETONES

##### SATURATED KETONES

|                        |            |        |    |    |   |       |                                 |  |                 |        |       |       |         |     |
|------------------------|------------|--------|----|----|---|-------|---------------------------------|--|-----------------|--------|-------|-------|---------|-----|
| acetone                | 67-64-1    | 58.08  | 3  | 6  | 1 | 0.772 | solvent                         | colorless clear liquid                     | 57° C           | no     | 3465  | 20    | -17° C  | sol |
| methyl ethyl ketone    | 78-93-3    | 72.11  | 4  | 8  | 1 | 0.786 | ethereal                        | colorless clear liquid                     | 79° C           | no     | 2730  | 6840  | -3° C   | sol |
| 2-pentanone            | 107-87-9   | 86.13  | 5  | 10 | 1 | 0.796 | fruity                          | colorless clear liquid                     | 105° C          | no     | 3730  | 6500  | 7° C    | sol |
| 3-pentanone            | 96-22-0    | 86.13  | 5  | 10 | 1 | 0.796 | ether                           | colorless clear liquid                     | 102° C          | -40° C | 2140  | 20    | 13° C   | sol |
| 3-hexanone             | 589-38-8   | 100.16 | 6  | 12 | 1 | 0.803 | fruity                          | colorless clear liquid                     | 123° C          | no     | 2727  | 3170  | 45° C   | sol |
| 3-methyl-2-pentanone   | 565-61-7   | 100.16 | 6  | 12 | 1 | 0.803 |                                 | colorless clear liquid                     | 117° C          | no     | no    | no    | 12° C   | sol |
| butyl methyl ketone    | 591-78-6   | 100.16 | 6  | 12 | 1 | 0.800 | ether                           | colorless clear liquid                     | 128° C          | no     | 2590  | 4800  | 35° C   | sol |
| isobutyl methyl ketone | 108-10-1   | 100.16 | 6  | 12 | 1 | 0.800 | petroleum                       | colorless clear liquid                     | 117° C          | no     | 2080  | >3000 | 13° C   | sol |
| 2-heptanone            | 110-43-0   | 114.19 | 7  | 14 | 1 | 0.808 | cheesy                          | colorless clear liquid                     | 150° C          | -27° C | 1670  | 12600 | 47° C   | sol |
| 4-heptanone            | 123-19-3   | 114.19 | 7  | 14 | 1 | 0.808 | fruity                          | colorless clear liquid                     | 144° C          | -33° C | 3049  | 5660  | 49° C   | sol |
| 5-methyl-2-hexanone    | 110-12-3   | 114.19 | 7  | 14 | 1 | 0.806 |                                 | colorless clear liquid                     | 144° C          | no     | 3200  | 10    | 41° C   | sol |
| 2-octanone             | 111-13-7   | 128.21 | 8  | 16 | 1 | 0.812 | earthy                          | colorless to pale yellow clear liquid      | 174° C          | -16° C | >5000 | 1337  | 63° C   | sol |
| 3-octanone             | 106-68-3   | 128.21 | 8  | 16 | 1 | 0.811 | herbal                          | colorless clear liquid                     | 168° C          | no     | >5000 | no    | 46° C   | sol |
| 5-methyl-3-heptanone   | 541-85-5   | 128.21 | 8  | 16 | 1 | 0.811 |                                 | colorless clear liquid                     | 158° C          | no     | 3500  | 16000 | 44° C   | sol |
| 6-methyl-3-heptanone   | 624-42-0   | 128.21 | 8  | 16 | 1 | 0.811 |                                 | colorless clear liquid                     | 162° C          | no     | no    | no    | 44° C   | sol |
| 2-nonanone             | 821-55-6   | 142.24 | 9  | 18 | 1 | 0.816 | fruity                          | colorless to pale yellow clear oily liquid | 195° C          | -21° C | 3200  | >5000 | 64° C   | sol |
| 3-nonanone             | 925-78-0   | 142.24 | 9  | 18 | 1 | 0.816 | floral                          | colorless clear liquid                     | 188° C          | no     | no    | no    | 68° C   | sol |
| 4-nonanone             | 4485-09-0  | 142.24 | 9  | 18 | 1 | 0.816 |                                 | colorless clear liquid                     | 188° C          | no     | no    | no    | 61° C   | sol |
| 2-decanone             | 693-54-9   | 156.27 | 10 | 20 | 1 | 0.819 | floral                          | colorless clear liquid                     | 210° C          | 14° C  | 7936  | no    | 85° C   | sol |
| 3-decanone             | 928-80-3   | 156.27 | 10 | 20 | 1 | 0.819 | waxy fruity citrus floral green | colorless clear liquid                     | 203° C          | 2° C   | no    | no    | 63° C   | sol |
| 2-undecanone           | 112-12-9   | 170.29 | 11 | 22 | 1 | 0.821 | waxy fruity                     | colorless to pale yellow clear liquid      | 232° C          | 12° C  | 950   | >5000 | 89° C   | sol |
| 4-undecanone           | 14476-37-0 | 170.29 | 11 | 22 | 1 | 0.821 | fruity                          | colorless clear liquid                     | 226° C          | 5° C   | no    | no    | 73° C   | sol |
| 2-dodecanone           | 6175-49-1  | 184.32 | 12 | 24 | 1 | 0.823 | fruity citrus floral            | white liquid to crystals                   | 245° C          | 22° C  | no    | no    | 110° C  | sol |
| 2-tridecanone          | 593-08-8   | 198.34 | 13 | 26 | 1 | 0.825 | fatty waxy dairy                | white crystals                             | 195° C@110mm Hg | 30° C  | no    | no    | >110° C | sol |
| 2-tetradecanone        | 2345-27-9  | 212.37 | 14 | 28 | 1 | 0.827 |                                 | colorless crystalline solid                | 279° C          | 33° C  | no    | no    | 84° C   | sol |
| 2-pentadecanone        | 2345-28-0  | 226.40 | 15 | 30 | 1 | 0.828 | floral                          | colorless white solid                      | 293° C          | 39° C  | no    | no    | >110° C | sol |
| 2-hexadecanone         | 18787-63-8 | 240.42 | 16 | 32 | 1 | 0.829 | fruity                          |  | 317° C          | no     | no    | no    | 83° C   | sol |
| 2-heptadecanone        | 2922-51-2  | 254.45 | 17 | 34 | 1 | 0.830 |                                 | white solid                                | 319° C          | 48° C  | no    | no    | 81° C   | sol |

##### UNSATURATED KETONES

|                   |            |        |   |    |   |       |                |                                       |                 |    |      |       |       |     |
|-------------------|------------|--------|---|----|---|-------|----------------|---------------------------------------|-----------------|----|------|-------|-------|-----|
| 3-penten-2-one    | 625-33-2   | 84.11  | 5 | 8  | 1 | 0.826 | solvent        | colorless to yellow clear liquid      | 123° C          | no | 3200 | 500   | 21° C | sol |
| 1-octen-3-one     | 4312-99-6  | 126.20 | 8 | 14 | 1 | 0.825 | mushroom       | colorless clear liquid                | 178° C          | no | no   | no    | 52° C | sol |
| 3-octen-2-one     | 1669-44-9  | 126.20 | 8 | 14 | 1 | 0.833 | earthy         | colorless clear liquid                | 100° C@18 mm Hg | no | no   | no    | 54° C | sol |
| methyl heptenone  | 110-93-0   | 126.20 | 8 | 14 | 1 | 0.837 | citrus         | colorless to pale yellow clear liquid | 174° C          | no | 4100 | >5000 | 51° C | sol |
| 4-octen-3-one     | 14129-48-7 | 126.20 | 8 | 14 | 1 | 0.833 | coconut fruity | colorless to pale yellow clear liquid | 180° C          | no | no   | no    | 67° C | sol |
| (E)-2-nonen-4-one | 27743-70-0 | 140.22 | 9 | 16 | 1 | 0.835 | fruity         | colorless to pale yellow clear liquid | 200° C          | no | no   | no    | 81° C | sol |

|                   |            |        |    |    |   |       |              |                                       |        |       |    |    |       |     |
|-------------------|------------|--------|----|----|---|-------|--------------|---------------------------------------|--------|-------|----|----|-------|-----|
| (E)-3-nonen-2-one | 18402-83-0 | 140.22 | 9  | 16 | 1 | 0.835 |              | colorless clear liquid                | 201° C | no    | no | no | 81° C | sol |
| 3-decen-2-one     | 10519-33-2 | 154.25 | 10 | 18 | 1 | 0.836 | fatty        | colorless clear liquid                | 125° C | 16° C | no | no | 92° C | sol |
| 10-undecen-2-one  | 36219-73-5 | 168.28 | 11 | 20 | 1 | 0.831 | citrus fatty | colorless to pale yellow clear liquid | 255° C | no    | no | no | 89° C | sol |

|                     |           |        |   |    |   |       |       |                          |        |    |    |    |       |     |
|---------------------|-----------|--------|---|----|---|-------|-------|--------------------------|--------|----|----|----|-------|-----|
| methyl heptadienone | 1604-28-0 | 124.18 | 8 | 12 | 1 | 0.857 | spicy | pale yellow clear liquid | 190° C | no | no | no | 81° C | sol |
|---------------------|-----------|--------|---|----|---|-------|-------|--------------------------|--------|----|----|----|-------|-----|

#### AROMATIC KETONES

|                             |          |        |    |    |   |       |                              |                                     |                  |        |      |       |         |     |
|-----------------------------|----------|--------|----|----|---|-------|------------------------------|-------------------------------------|------------------|--------|------|-------|---------|-----|
| 3-methyl cyclohexanone      | 591-24-2 | 112.17 | 7  | 12 | 1 | 0.912 | camphoreous                  | colorless clear liquid              | 170° C           | no     | no   | no    | 52° C   | sol |
| acetophenone                | 98-86-2  | 120.15 | 8  | 8  | 1 | 0.993 | floral                       | colorless clear liquid              | 202° C           | 20° C  | 815  | 15900 | 82° C   | sol |
| methyl acetophenone         | 122-00-9 | 134.18 | 9  | 10 | 1 | 0.977 | floral                       | colorless clear liquid              | 224° C           | -24° C | 1400 | no    | 92° C   | sol |
| 2'-hydroxyacetophenone      | 118-93-4 | 136.15 | 8  | 8  | 2 | 1.140 | phenolic                     | yellow green clear liquid           | 213° C@717 mm Hg | 5° C   | no   | no    | >110° C | sol |
| 4'-hydroxyacetophenone      | 99-93-4  | 136.15 | 8  | 8  | 2 | 1.140 | floral                       | white to beige powder               | 148° C           | 110° C | 1500 | no    | 121° C  | sol |
| 2',4'-dimethyl acetophenone | 89-74-7  | 148.20 | 10 | 12 | 1 | 0.965 | floral                       | pale yellow clear oily liquid       | 118° C@18 mm Hg  | no     | no   | no    | 100° C  | sol |
| acetanisole                 | 100-06-1 | 150.17 | 9  | 10 | 2 | 1.035 | sweet anisic vanilla powdery | white to pale yellow crystals       | 256° C           | 38° C  | 1720 | >5000 | >110° C | sol |
| acetovanillone              | 498-02-2 | 166.17 | 9  | 10 | 3 | 1.158 | vanilla                      | pale yellow to yellowish tan powder | 297° C           | 113° C | no   | no    | >110° C | sol |

#### TERPENE KETONES

|                        |            |        |    |    |   |       |                             |  |                 |        |       |       |         |            |
|------------------------|------------|--------|----|----|---|-------|-----------------------------|--|-----------------|--------|-------|-------|---------|------------|
| camphenilone           | 13211-15-9 | 138.21 | 9  | 14 | 1 | 0.986 | camphor                     |  | 195° C          | no     | no    | no    | 66° C   | sol        |
| carvone                | 99-49-0    | 150.22 | 10 | 14 | 1 | 0.940 | minty licorice              | colorless to pale yellow clear liquid    | 230° C          | no     | 1640  | no    | 89° C   | sol        |
| d-carvone              | 2244-16-8  | 150.22 | 10 | 14 | 1 | 0.940 | spice bread caraway         | colorless to pale yellow clear liquid    | 230° C          | no     | 3710  | 4     | 96° C   | sol        |
| l-carvone              | 6485-40-1  | 150.22 | 10 | 14 | 1 | 0.940 | sweet spearmint herbal      | colorless to pale yellow clear liquid    | 230° C          | no     | 1640  | no    | 89° C   | sol        |
| chrysanthenone         | 473-06-3   | 150.22 | 10 | 14 | 1 | 0.992 |                             | colorless to pale yellow clear liquid    | 209° C          | no     | no    | no    | 76° C   | sol        |
| umbellulone            | 24545-81-1 | 150.22 | 10 | 14 | 1 | 1.057 | minty pungent               |  | 220° C          | no     | 1450  | no    | 85° C   | sol        |
| verbenone              | 80-57-9    | 150.22 | 10 | 14 | 1 | 0.992 | camphoreous                 | colorless to yellow clear viscous liquid | 104° C@16 mm Hg | 44° C  | no    | no    | 85° C   | sol        |
| l-verbenone            | 1196-01-6  | 150.22 | 10 | 14 | 1 | 0.992 | spicy mint camphor          | colorless to pale yellow clear liquid    | 228° C          | no     | no    | no    | 85° C   | sol        |
| α-thujone              | 546-80-5   | 152.23 | 10 | 16 | 1 | 1.009 | cedarleaf                   | colorless to pale yellow clear liquid    | 201° C          | no     | 500   | no    | no      | sol        |
| β-thujone              | 1125-12-8  | 152.23 | 10 | 16 | 1 | 1.009 |                             | colorless to pale yellow clear liquid    | 202° C          | no     | no    | no    | 64° C   | sol        |
| (±)-camphor            | 76-22-2    | 152.23 | 10 | 16 | 1 | 0.982 | camphoreous                 | white to pale yellow crystalline solid   | 205° C          | 176° C | 1310  | no    | 64° C   | sol        |
| d-camphor              | 464-49-3   | 152.23 | 10 | 16 | 1 | 0.982 | camphoreous                 | white colorless crystals                 | 204° C          | 180° C | 1310  | no    | 64° C   | sol        |
| fenchone               | 1195-79-5  | 152.23 | 10 | 16 | 1 | 0.982 |                             |  | 194° C          | 6° C   | no    | no    | 60° C   | sol        |
| d-fenchone             | 4695-62-9  | 152.23 | 10 | 16 | 1 | 0.982 | herbal earthy woody         | colorless clear oily liquid              | 193° C          | 7° C   | 6160  | no    | 63° C   | sol        |
| l-fenchone             | 7787-20-4  | 152.23 | 10 | 16 | 1 | 0.982 | camphor herbal earthy woody | colorless clear oily liquid              | 193° C          | 6° C   | no    | no    | 63° C   | sol        |
| artemisiyl ketone      | 546-49-6   | 152.23 | 10 | 16 | 1 | 0.849 | herbal honey mint berry     | pale yellow to yellow green clear liquid | 182° C          | no     | no    | no    | 57° C   | sol        |
| p-anisyl methyl ketone | 122-84-9   | 164.20 | 10 | 12 | 2 | 1.027 | fruity                      | colorless clear oily liquid              | 264° C          | no     | 3330  | >5000 | 102° C  | sol        |
| β-damasconone          | 23696-85-7 | 190.28 | 13 | 18 | 1 | 0.926 | floral                      | yellow clear liquid                      | 274° C          | no     | no    | no    | >100° C | sol        |
| α-damascone            | 43052-87-5 | 192.30 | 13 | 20 | 1 | 0.892 | floral                      |  | no              | no     | no    | no    | >93° C  | sol        |
| (E)-α-damascone        | 24720-09-0 | 192.30 | 13 | 20 | 1 | 0.898 | fruity                      | colorless to pale yellow clear liquid    | 266° C          | no     | no    | no    | >93° C  | sol        |
| (E)-β-damascone        | 23726-91-2 | 192.30 | 13 | 20 | 1 | 0.907 | fruity                      | pale yellow clear liquid                 | 200° C          | no     | 2920  | no    | >93° C  | sol        |
| zingiberone            | 122-48-5   | 194.22 | 11 | 14 | 3 | 1.111 | spicy                       | yellow to yellow brown crystals          | 290° C          | 41° C  | 2580  | >5000 | no      | 1:1 in 50% |
| geranyl acetone        | 689-67-8   | 194.31 | 13 | 22 | 1 | 0.855 | fresh floral green          | colorless to pale yellow clear liquid    | 247° C          | no     | >6800 | >5000 | >100° C | sol        |
| α-ambrinol             | 41199-19-3 | 194.31 | 13 | 22 | 1 | 0.980 | amber                       | colorless to pale yellow clear liquid    | 281° C          | no     | no    | no    | >93° C  | sol        |
| ar-turmerone           | 532-65-0   | 216.32 | 15 | 20 | 1 | 0.945 |                             |  | 325° C          | no     | no    | no    | 122° C  | sol        |
| aristolone             | 6831-17-0  | 218.33 | 15 | 22 | 1 | 1.020 |                             |  | 306° C          | no     | no    | no    | 136° C  | sol        |
| α-turmerone            | 82508-15-4 | 218.33 | 15 | 22 | 1 | 0.924 |                             |  | 319° C          | no     | no    | no    | 141° C  | sol        |
| β-turmerone            | 82508-14-3 | 218.33 | 15 | 22 | 1 | 0.920 |                             |  | 320° C          | no     | no    | no    | 141° C  | sol        |
| zerumbone              | 471-05-6   | 218.33 | 15 | 22 | 1 | 0.887 |                             |  | 321° C          | no     | no    | no    | 133° C  | sol        |
| acoragermacrone        | 50281-45-3 | 220.35 | 15 | 24 | 1 | 0.886 |                             |  | 321° C          | no     | no    | no    | 147° C  | sol        |
| acolamone              | 39012-14-1 | 220.35 | 15 | 24 | 1 | 0.940 |                             |  | 298° C          | no     | no    | no    | 122° C  | sol        |
| valeranone             | 55528-90-0 | 222.37 | 16 | 26 | 1 | 0.940 |                             |  | 288° C          | no     | no    | no    | 120° C  | sol        |
| curzerenone            | 20493-56-5 | 230.30 | 15 | 18 | 2 | 1.063 |                             |  | 320° C          | no     | no    | no    | 148° C  | sol        |
| isoacorone             | 6168-64-5  | 236.35 | 15 | 24 | 2 | 1.000 |                             |  | 347° C          | no     | no    | no    | 131° C  | sol        |

#### ALDEHYDES

##### SATURATED ALDEHYDES

|                  |          |       |   |   |   |       |           |                        |       |    |      |      |        |     |
|------------------|----------|-------|---|---|---|-------|-----------|------------------------|-------|----|------|------|--------|-----|
| acetaldehyde     | 75-07-0  | 44.05 | 2 | 4 | 1 | 0.748 | etheral   | colorless clear liquid | 21° C | no | 661  | 3540 | -40° C | sol |
| butyraldehyde    | 123-72-8 | 72.11 | 4 | 8 | 1 | 0.784 | chocolate | colorless clear liquid | 75° C | no | 2490 | 3560 | -11° C | sol |
| isobutyraldehyde | 78-84-2  | 72.11 | 4 | 8 | 1 | 0.781 | spicy     | colorless clear liquid | 63° C | no | 960  | 7130 | -19° C | sol |

|                  |            |        |    |    |   |       |                  |                                       |                 |        |       |        |         |     |
|------------------|------------|--------|----|----|---|-------|------------------|---------------------------------------|-----------------|--------|-------|--------|---------|-----|
| valeraldehyde    | 110-62-3   | 86.13  | 5  | 10 | 1 | 0.794 | fermented        | colorless to pale yellow clear liquid | 102° C          | no     | 4581  | >5000  | 13° C   | sol |
| isovaleraldehyde | 590-86-3   | 86.13  | 5  | 10 | 1 | 0.791 | aldehydic        | colorless to pale yellow clear liquid | 92° C           | no     | 5600  | 3180   | -2° C   | sol |
| hexanal          | 66-25-1    | 100.16 | 6  | 12 | 1 | 0.801 | green            | colorless clear liquid                | 130° C          | no     | 4890  | no     | 32° C   | sol |
| heptanal         | 111-71-7   | 114.19 | 7  | 14 | 1 | 0.807 | green            | colorless clear liquid                | 152° C          | -43° C | 3200  | >5000  | 35° C   | sol |
| octanal          | 124-13-0   | 128.21 | 8  | 16 | 1 | 0.811 | aldehydic        | colorless to pale yellow clear liquid | 172° C          | 14° C  | 5630  | 6350   | 52° C   | sol |
| nonanal          | 124-19-6   | 142.24 | 9  | 18 | 1 | 0.815 | aldehydic        | colorless to pale yellow clear liquid | 200° C          | no     | >5000 | 5000   | 71° C   | sol |
| decanal          | 112-31-2   | 156.27 | 10 | 20 | 1 | 0.818 | aldehydic        | colorless to pale yellow clear liquid | 208° C          | 18° C  | 3730  | 5040   | 86° C   | sol |
| undecanal        | 112-44-7   | 170.29 | 11 | 22 | 1 | 0.820 | aldehydic        | colorless to pale yellow clear liquid | 223° C          | no     | no    | no     | 96° C   | sol |
| dodecanal        | 112-54-9   | 184.32 | 12 | 24 | 1 | 0.823 | aldehydic        | colorless to pale yellow clear liquid | 185° C@100mm Hg | 5° C   | 23000 | no     | 102° C  | sol |
| tridecanal       | 10486-19-8 | 198.34 | 13 | 26 | 1 | 0.824 | aldehydic        | colorless clear liquid                | 112° C@12mm Hg  | 14° C  | no    | no     | >100° C | sol |
| tetradecanal     | 124-25-4   | 212.37 | 14 | 28 | 1 | 0.826 | fatty waxy amber | colorless to pale yellow clear liquid | 260° C          | 21° C  | >5000 | >10000 | 110° C  | sol |
| pentadecanal     | 2765-11-9  | 226.40 | 15 | 30 | 1 | 0.827 | fresh waxy       |                                       | 285° C          | 25° C  | no    | no     | 130° C  | sol |
| hexadecanal      | 629-80-1   | 240.42 | 16 | 32 | 1 | 0.829 | cardboard        | white solid                           | 287° C          | 35° C  | no    | no     | 139° C  | sol |

#### UNSATURATED ALDEHYDES

|                        |            |        |    |    |   |       |                    |  |                  |       |       |       |         |     |
|------------------------|------------|--------|----|----|---|-------|--------------------|--|------------------|-------|-------|-------|---------|-----|
| (E)-2-penten-1-al      | 764-39-6   | 84.12  | 5  | 8  | 1 | 0.824 | green              | colorless clear liquid                     | 81° C@160mm Hg   | 16° C | no    | no    | 23° C   | sol |
| 2-hexen-1-al           | 505-57-7   | 98.14  | 6  | 10 | 1 | 0.828 | fruity green leafy | colorless to pale yellow clear liquid      | 146° C           | no    | no    | no    | 38° C   | sol |
| (E)-2-hexen-1-al       | 6728-26-3  | 98.14  | 6  | 10 | 1 | 0.828 | green              | colorless to pale yellow clear liquid      | 146° C           | no    | 780   | 600   | 38° C   | sol |
| (E)-2-hexen-1-al       | 85761-70-2 | 98.14  | 6  | 10 | 1 | 0.828 | green leafy        | colorless clear liquid                     | 142° C           | no    | no    | no    | 48° C   | sol |
| 3-hexen-1-al           | 4440-65-7  | 98.14  | 6  | 10 | 1 | 0.828 | green leafy        | colorless clear liquid                     | 128° C           | no    | no    | no    | 57° C   | sol |
| (Z)-3-hexen-1-al       | 6789-80-6  | 98.14  | 6  | 10 | 1 | 0.828 | green grassy       | colorless clear liquid                     | 20° C@0.20mm Hg  | no    | 1560  | 3700  | 44° C   | sol |
| (Z)-4-hexen-1-al       | 4634-89-3  | 98.14  | 6  | 10 | 1 | 0.828 | green              | colorless clear liquid                     | 75° C@100 mm Hg  | no    | no    | no    | 18° C   | sol |
| 2-methyl-2-penten-1-al | 623-36-9   | 98.14  | 6  | 10 | 1 | 0.829 | fruity             | colorless clear liquid                     | 135° C           | no    | 4290  | 4500  | 32° C   | sol |
| 2-hepten-1-al          | 2463-63-0  | 112.17 | 7  | 12 | 1 | 0.830 | green fatty        | colorless clear liquid                     | 166° C           | no    | no    | no    | 53° C   | sol |
| (E)-2-hepten-1-al      | 18829-55-5 | 112.17 | 7  | 12 | 1 | 0.830 | green vegetable    | colorless clear liquid                     | 166° C           | no    | 1300  | 860   | 52° C   | sol |
| (Z)-4-hepten-1-al      | 6728-31-0  | 112.17 | 7  | 12 | 1 | 0.830 | green              | colorless to pale yellow clear oily liquid | 60° C@25mm Hg    | no    | no    | no    | 39° C   | sol |
| (E)-2-octen-1-al       | 2363-89-5  | 126.20 | 8  | 14 | 1 | 0.832 | green              | colorless to pale yellow clear oily liquid | 85° C@19mm Hg    | no    | no    | no    | 68° C   | sol |
| 2-nonen-1-al           | 2463-53-8  | 140.22 | 9  | 16 | 1 | 0.834 | fatty              | colorless to pale yellow clear oily liquid | 189° C           | no    | 5000  | 3700  | 84° C   | sol |
| (E)-2-nonen-1-al       | 2463-53-8  | 140.22 | 9  | 16 | 1 | 0.834 | green              | colorless to pale yellow clear oily liquid | 189° C           | no    | no    | no    | 84° C   | sol |
| (Z)-2-nonen-1-al       | 60784-31-8 | 140.22 | 9  | 16 | 1 | 0.834 | fatty waxy         | colorless clear liquid                     | 203° C           | no    | no    | no    | 84° C   | sol |
| (Z)-6-nonen-1-al       | 2277-19-2  | 140.22 | 9  | 16 | 1 | 0.834 | melon              | colorless clear liquid                     | 87° C@ 19 mm Hg  | no    | >5000 | >5000 | 66° C   | sol |
| 2-decen-1-al           | 3913-71-1  | 154.25 | 10 | 18 | 1 | 0.835 | fatty              | colorless clear oily liquid                | 230° C           | no    | 5000  | 3400  | 96° C   | sol |
| (E)-2-decen-1-al       | 3913-81-3  | 154.25 | 10 | 18 | 1 | 0.835 | waxy               | colorless to pale yellow clear liquid      | 229° C           | no    | 5000  | 3400  | 88° C   | sol |
| (Z)-2-decen-1-al       | 2497-25-8  | 154.25 | 10 | 18 | 1 | 0.835 | tallow             | colorless to pale yellow clear liquid      | 228° C           | no    | no    | no    | 96° C   | sol |
| (E)-4-decen-1-al       | 65405-70-1 | 154.25 | 10 | 18 | 1 | 0.835 | aldehydic          | pale yellow clear liquid                   | 220° C           | no    | no    | no    | 85° C   | sol |
| (E)-2-undecen-1-al     | 2463-77-6  | 168.28 | 11 | 20 | 1 | 0.837 | aldehydic          | pale yellow clear liquid                   | 115° C@ 10 mm Hg | no    | no    | no    | 104° C  | sol |
| 2-dodecen-1-al         | 4826-62-4  | 182.30 | 12 | 22 | 1 | 0.837 | herbal             | colorless to pale yellow clear liquid      | 264° C           | no    | >5000 | 5000  | 93° C   | sol |
| (E)-2-dodecen-1-al     | 20407-84-5 | 182.30 | 12 | 22 | 1 | 0.837 | citrus             | colorless clear oily liquid                | 272° C           | no    | no    | no    | >100° C | sol |
| 2-tridecen-1-al        | 7774-82-5  | 196.33 | 13 | 24 | 1 | 0.838 | aldehydic          | colorless to pale yellow clear oily liquid | 116° C@10 mm Hg  | no    | >5000 | 5000  | 139° C  | sol |
| (E)-2-tetradecen-1-al  | 64461-99-0 | 210.36 | 14 | 26 | 1 | 0.839 | citrus waxy green  | colorless to pale yellow clear liquid      | 300° C           | no    | no    | no    | 110° C  | sol |
| (E)-2-pentadecen-1-al  | 64462-00-6 | 224.38 | 15 | 28 | 1 | 0.840 |                    |  | 316° C           | no    | no    | no    | 156° C  | sol |

|                        |            |        |    |    |   |       |                                  |   |                 |        |      |       |         |            |
|------------------------|------------|--------|----|----|---|-------|----------------------------------|---|-----------------|--------|------|-------|---------|------------|
| benzaldehyde           | 100-52-7   | 106.12 | 7  | 6  | 1 | 1.049 | strong sharp sweet bitter almond | colorless to pale yellow clear liquid       | 178° C          | -25° C | 1300 | no    | 63° C   | sol        |
| salicyl aldehyde       | 90-02-8    | 122.12 | 7  | 6  | 2 | 1.226 | medical spicy cinnamon           | colorless clear oily liquid                 | 197° C          | 1° C   | 520  | 3000  | 77° C   | sol        |
| cinnamaldehyde         | 104-55-2   | 132.16 | 9  | 8  | 1 | 1.034 | sweet spice warm                 | yellow to dark yellow clear oily liquid     | 250° C          | -7° C  | 2200 | 0.59  | 99° C   | sol        |
| (E)-cinnamaldehyde     | 14371-10-9 | 132.16 | 9  | 8  | 1 | 1.034 | spicy                            | pale yellow to yellow clear liquid          | 248° C          | no     | no   | no    | 71° C   | sol        |
| (Z)-cinnamaldehyde     | 57194-69-1 | 132.16 | 9  | 8  | 1 | 1.034 | spicy cinnamaon                  | pale yellow to yellow clear liquid          | 245° C          | no     | no   | no    | 71° C   | sol        |
| <i>p</i> -anisaldehyde | 123-11-5   | 136.15 | 8  | 8  | 2 | 1.088 | sweet powdery floral             | pale yellow clear oily liquid               | 249° C          | -1° C  | 1510 | >5000 | 109° C  | 1:7 in 50% |
| <i>m</i> -anisaldehyde | 591-31-1   | 136.15 | 8  | 8  | 2 | 1.088 |                                  | colorless to pale yellow clear liquid       | 230° C          | no     | no   | no    | >110° C | sol        |
| <i>o</i> -anisaldehyde | 135-02-4   | 136.15 | 8  | 8  | 2 | 1.088 | anistic                          | colorless to cream amber crystalline powder | 243° C          | 37° C  | 2500 | >5000 | 118° C  | sol        |
| coumarin               | 91-64-5    | 146.14 | 9  | 6  | 2 | 1.248 | sweet hay tonka new mown hay     | white crystals                              | 300° C          | 71° C  | 293  | no    | >110° C | sol        |
| cocoa butenal          | 4411-89-6  | 146.19 | 10 | 10 | 1 | 0.990 | musty floral honey powdery cocoa | yellow clear liquid                         | 177° C@15 mm Hg | no     | no   | no    | 106° C  | sol        |
| cuminaldehyde          | 122-03-2   | 148.20 | 10 | 12 | 1 | 0.980 | spicy cumin green herbal         | colorless to pale yellow clear liquid       | 236° C          | no     | 1390 | 2800  | 93° C   | sol        |
| citral                 | 5392-40-5  | 152.23 | 10 | 16 | 1 | 0.856 | sharp lemon sweet                | colorless to pale yellow clear liquid       | 229° C          | no     | 4960 | 2250  | 91° C   | sol        |
| (E)-citral             | 141-27-5   | 152.23 | 10 | 16 | 1 | 0.856 | citrus lemon                     | colorless to yellow clear liquid            | 229° C          | no     | 500  | no    | 102° C  | sol        |
| (Z)-citral             | 106-26-3   | 152.23 | 10 | 16 | 1 | 0.856 | sweet citral lemon peel          | pale yellow to yellow clear liquid          | 229° C          | no     | no   | no    | 102° C  | sol        |
| α-campholenic aldehyde | 4501-58-0  | 152.23 | 10 | 16 | 1 | 0.897 | herbal                           | pale yellow clear liquid                    | 84° C@1 mm Hg   | no     | no   | no    | 66° C   | sol        |
| 2,4-decadien-1-al      | 2363-88-4  | 152.23 | 10 | 16 | 1 | 0.854 | fatty                            | yellow clear liquid                         | 244° C          | no     | no   | no    | 107° C  | sol        |



|                         |            |        |    |    |   |       |                                |                                       |        |       |      |       |         |     |
|-------------------------|------------|--------|----|----|---|-------|--------------------------------|---------------------------------------|--------|-------|------|-------|---------|-----|
| (E,E)-2,4-decadien-1-al | 2363-88-4  | 152.23 | 10 | 16 | 1 | 0.854 | fatty                          | pale yellow to yellow clear liquid    | 280° C | no    | no   | no    | 85° C   | sol |
| (E,Z)-2,4-decadien-1-al | 25152-83-4 | 152.23 | 10 | 16 | 1 | 0.854 | fatty                          | yellow clear liquid                   | 245° C | no    | no   | no    | 102° C  | sol |
| citronellal             | 106-23-0   | 154.25 | 10 | 18 | 1 | 0.835 | sweet floral waxy citrus green | colorless to pale yellow clear liquid | 207° C | no    | 2420 | 2500  | 76° C   | sol |
| vanillin                | 121-33-5   | 166.17 | 9  | 10 | 3 | 1.231 | vanilla                        | white to off white crystalline powder | 286° C | 83° C | 1580 | >5010 | >91° C  | sol |
| veratraldehyde          | 120-14-9   | 166.17 | 9  | 10 | 3 | 1.114 | creamy                         | yellow crystalline needles            | 281° C | 44° C | 3200 | >5000 | >110° C | sol |
| coniferaldehyde         | 458-36-6   | 178.18 | 10 | 10 | 3 | 1.186 |                                |                                       | 331° C | 83° C | no   | no    | 137° C  | sol |
| cocoa hexenal           | 21834-92-4 | 188.27 | 13 | 16 | 1 | 0.953 | chocolate                      | colorless to yellow clear liquid      | 290° C | no    | no   | no    | >110° C | sol |
| cyclamen aldehyde       | 103-95-7   | 190.28 | 13 | 18 | 1 | 0.935 | floral cyclamen green          | colorless to pale yellow clear liquid | 270° C | no    | 3810 | >5000 | 109° C  |     |
| α-amyl cinnamaldehyde   | 122-40-7   | 202.29 | 14 | 18 | 1 | 0.962 | floral                         | pale yellow to yellow clear liquid    | 289° C | no    | 3730 | no    | >100° C | sol |
| abietal                 | 6704-50-3  | 286.45 | 20 | 20 | 1 | 0.990 |                                |                                       | 392° C | no    | no   | no    | 141° C  | sol |

|          |          |        |    |    |   |       |              |  |                  |        |      |      |        |     |
|----------|----------|--------|----|----|---|-------|--------------|--|------------------|--------|------|------|--------|-----|
| elemicin | 487-11-6 | 208.25 | 12 | 16 | 3 | 1.011 | spice flower |  | 156° C@ 17 mm Hg | no     | no   | no   | 93° C  | sol |
| asarone  | 494-40-6 | 208.25 | 12 | 16 | 3 | 1.028 | odorless     |  | 266° C           | 63° C  | no   | no   | 108° C | sol |
| camphor  | 76-22-2  | 152.23 | 10 | 16 | 1 | 0.982 | camphoreous  | white to pale yellow crystalline solid | 205° C           | 177° C | 1310 | 2000 | 64° C  | sol |

#### LACTONES

|                                |            |        |    |    |   |       |                                   |  |                   |        |       |       |         |     |
|--------------------------------|------------|--------|----|----|---|-------|-----------------------------------|--|-------------------|--------|-------|-------|---------|-----|
| γ-butyrolactone                | 96-48-0    | 86.09  | 4  | 6  | 2 | 1.128 | creamy oily fatty caramel         | colorless to pale yellow clear liquid      | 204° C            | -45° C | 1540  | >5000 | 98° C   | sol |
| α-angelica lactone             | 591-12-8   | 98.10  | 5  | 6  | 2 | 1.120 | solvent                           | white crystals                             | 168° C            | 18° C  | 3900  | no    | 68° C   | sol |
| γ-valerolactone                | 108-29-2   | 100.12 | 5  | 8  | 2 | 1.040 | herbal sweet warm cocoa woody     | colorless to pale yellow clear liquid      | 207° C            | -31° C | >5000 | >5000 | 96° C   | sol |
| β-hexalactone                  | 823-22-3   | 114.14 | 6  | 10 | 2 | 1.001 | sweet herbal                      | colorless clear oily liquid                | 112° C@15 mm Hg   | no     | 13020 | no    | 107° C  | sol |
| γ-hexalactone                  | 695-06-7   | 114.14 | 6  | 10 | 2 | 1.002 | herbal coconut coumarin tobacco   | colorless to pale yellow clear liquid      | 220° C            | -18° C | >5000 | >5000 | 98° C   | sol |
| δ-heptalactone                 | 3301-90-4  | 128.17 | 7  | 12 | 2 | 0.974 | coconut                           | colorless clear oily liquid                | 230° C            | 17° C  | no    | no    | 93° C   | sol |
| γ-heptalactone                 | 105-21-5   | 128.17 | 7  | 12 | 2 | 0.983 | coconut                           | colorless clear oily liquid                | 103° C@7 mm Hg    | no     | >5000 | >5000 | >110° C | sol |
| δ-octalactone                  | 698-76-0   | 142.20 | 8  | 14 | 2 | 0.960 | coconut                           | colorless to pale yellow clear liquid      | 116° C@12 mm Hg   | no     | >5000 | >5000 | >93° C  | sol |
| γ-octalactone                  | 104-50-7   | 142.20 | 8  | 14 | 2 | 0.960 | coconut                           | colorless to pale yellow clear liquid      | 234° C            | no     | >5000 | >5000 | >100° C | sol |
| coumarin                       | 91-64-5    | 146.14 | 9  | 16 | 2 | 1.248 | tonka                             | white crystals                             | 300° C            | 70° C  | 293   | no    | >110° C | sol |
| γ-nonolactone                  | 104-61-0   | 156.22 | 9  | 16 | 2 | 0.956 | coconut creamy waxy buttery       | colorless to pale yellow clear oily liquid | 243° C            | no     | 6600  | >5000 | >93° C  | sol |
| dehydromenthofuro lactone      | 75640-26-5 | 164.20 | 10 | 12 | 2 | 1.093 | lactonic coumarin sweet coconut   |  | 265° C@10 mm Hg   | no     | no    | no    | no      | sol |
| mint lactone                   | 13341-72-5 | 166.22 | 10 | 14 | 2 | 1.070 | creamy coumarin coconut tobacco   | colorless clear liquid                     | 302° C            | no     | no    | no    | 80° C   | sol |
| creamy lactone                 | 25524-95-2 | 168.23 | 10 | 16 | 2 | 0.962 | creamy                            | colorless clear liquid                     | 280° C            | no     | no    | no    | 110° C  | sol |
| massoia lactone                | 51154-96-2 | 168.23 | 10 | 16 | 2 | 0.964 | coconut                           |  | 172° C            | no     | 1890  | no    | >93° C  | sol |
| δ-decalactone                  | 705-86-2   | 170.25 | 10 | 18 | 2 | 0.940 | sweet oily coconut creamy dairy   | colorless clear liquid                     | 281° C            | -27° C | >5000 | >5000 | >110° C | sol |
| γ-decalactone                  | 706-14-9   | 170.25 | 10 | 18 | 2 | 0.946 | fruity creamy coconut buttery     | colorless to pale yellow clear oily liquid | 153° C@15 mm Hg   | no     | >5000 | >5000 | 93° C   | sol |
| (±)-3-methyl-gamma-decalactone | 67663-01-8 | 184.28 | 11 | 20 | 2 | 0.922 | floral                            | colorless clear liquid                     | 276° C            | no     | no    | no    | 110° C  | sol |
| δ-undecalactone                | 710-04-3   | 184.28 | 11 | 20 | 2 | 0.932 | creamy fatty coconut fruity waxy  | colorless to pale yellow clear liquid      | 154° C@10.5 mm Hg | no     | >5000 | >5000 | >110° C | sol |
| γ-undecalactone                | 104-67-6   | 184.28 | 11 | 20 | 2 | 0.938 | fruity peach creamy fatty         | colorless to pale yellow clear oily liquid | 297° C            | no     | 18500 | no    | 93° C   | sol |
| dairy lactone                  | 18679-18-0 | 196.29 | 12 | 20 | 2 | 0.950 | fatty                             | colorless to yellow clear liquid           | 310° C            | no     | >5000 | no    | >100° C | sol |
| δ-dodecalactone                | 713-95-1   | 198.30 | 12 | 22 | 2 | 0.926 | fresh peach oily coconut buttery  | colorless to pale yellow clear liquid      | 141° C@1 mm Hg    | -12° C | >5000 | >5000 | >110° C | sol |
| γ-dodecalactone                | 7.5.2305   | 198.30 | 12 | 22 | 2 | 0.931 | fatty peach sweet metallic fruity | colorless to pale yellow clear oily liquid | 145° C@5 mm Hg    | 18° C  | >5000 | >5000 | >110° C | sol |
| δ-tetradecalactone             | 2721-22-4  | 226.36 | 14 | 26 | 2 | 0.916 | waxy creamy oil fatty sweet milky | colorless to pale yellow clear liquid      | 132° C@5 mm Hg    | no     | no    | no    | >110° C | sol |
| dehydrocostus lactone          | 477-43-0   | 230.30 | 15 | 18 | 2 | 1.090 |                                   |  | 384° C            | no     | no    | no    | 161° C  | sol |
| δ-pentadecalactone             | 106-02-5   | 240.38 | 15 | 28 | 2 | 0.892 | musk                              | colorless solid                            | 137° C@2 mm Hg    | 36° C  | >5000 | >5000 | >104° C | sol |

#### ESTERS

##### ACETATES

|                        |           |        |   |    |   |       |                              |                                       |        |         |       |       |       |     |
|------------------------|-----------|--------|---|----|---|-------|------------------------------|---------------------------------------|--------|---------|-------|-------|-------|-----|
| methyl acetate         | 79-20-9   | 74.08  | 3 | 6  | 2 | 0.908 | etheral                      | colorless clear liquid                | 57° C  | 23° C   | 6970  | >5000 | -9° C | sol |
| ethyl acetate          | 141-78-6  | 88.11  | 4 | 8  | 2 | 0.898 | etheral                      | colorless clear liquid                | 77° C  | -83° C  | 5620  | no    | -4° C | sol |
| propyl acetate         | 109-60-4  | 102.13 | 5 | 10 | 2 | 0.891 | solvent celery fruity        | colorless clear liquid                | 101° C | no      | 9370  | >20   | 13° C | sol |
| butyl acetate          | 123-86-4  | 116.16 | 6 | 12 | 2 | 0.886 | strong fruity banana solvent | colorless clear liquid                | 125° C | -78° C  | 10770 | 17600 | 26° C | sol |
| isobutyl acetate       | 110-19-0  | 116.16 | 6 | 12 | 2 | 0.883 | fruity                       | colorless clear liquid                | 116° C | -99° C  | 4760  | >5000 | 16° C | sol |
| acetoin acetate        | 4906-24-5 | 130.14 | 6 | 10 | 3 | 1.012 | fruity                       | colorless to pale yellow clear liquid | 117° C | no      | no    | no    | 66° C | sol |
| 2-methyl butyl acetate | 624-41-9  | 130.18 | 7 | 14 | 2 | 0.879 | fruity                       | colorless to pale yellow clear liquid | 140° C | no      | no    | no    | 35° C | sol |
| amyl acetate           | 628-63-7  | 130.18 | 7 | 14 | 2 | 0.882 | fruity                       | colorless clear liquid                | 150° C | -100° C | >1600 | no    | 24° C | sol |
| isoamyl acetate        | 123-92-2  | 130.18 | 7 | 14 | 2 | 0.879 | fruity                       | colorless clear liquid                | 142° C | -78° C  | 16600 | >5000 | 25° C | sol |

|                                 |            |        |    |    |   |       |                                  |  |                 |        |       |        |         |     |
|---------------------------------|------------|--------|----|----|---|-------|----------------------------------|--|-----------------|--------|-------|--------|---------|-----|
| <i>cis</i> -3-hexenyl acetate   | 3681-71-8  | 142.20 | 8  | 14 | 2 | 0.901 | fresh green sweet fruity         | colorless clear liquid                         | 167° C          | no     | 5000  | >5000  | 57° C   | sol |
| (E)-2-hexen-1-yl acetate        | 2497-18-9  | 142.20 | 8  | 14 | 2 | 0.901 | green                            | colorless to pale yellow clear liquid          | 165° C          | no     | >5000 | >5000  | 58° C   | sol |
| (Z)-3-hexen-1-yl acetate        | 3681-71-8  | 142.20 | 8  | 14 | 2 | 0.901 | green                            | colorless clear liquid                         | 166° C          | no     | >5000 | >5000  | 57° C   | sol |
| (E)-4-hexen-1-yl acetate        | 42125-17-7 | 142.20 | 8  | 14 | 2 | 0.901 |                                  | colorless clear liquid                         | 135° C          | no     | no    | no     | 39° C   | sol |
| (Z)-4-hexen-1-yl acetate        | 42125-34-8 | 142.20 | 8  | 14 | 2 | 0.901 |                                  | colorless clear liquid                         | 136° C          | no     | no    | no     | 39° C   | sol |
| hexyl acetate                   | 142-92-7   | 144.21 | 8  | 16 | 2 | 0.878 | fruity                           | colorless clear oily liquid                    | 171° C          | -80° C |       | >5000  | 56° C   | sol |
| benzyl acetate                  | 140-11-4   | 150.17 | 9  | 10 | 2 | 1.055 | sweet floral fruity jasmin fresh | colorless clear liquid                         | 208° C          | -51° C | 2490  | >5000  | 102° C  | sol |
| methyl phenyl acetate           | 101-41-7   | 150.17 | 9  | 10 | 2 | 1.055 | sweet floral honey spice waxy    | colorless clear liquid                         | 217° C          | no     | 2550  | 2440   | 91° C   | sol |
| para-cresyl acetate             | 140-39-6   | 150.17 | 9  | 10 | 2 | 1.047 | floral                           | colorless clear liquid                         | 210° C          | no     | 1900  | 2100   | 90° C   | sol |
| heptyl acetate                  | 112-06-1   | 158.24 | 9  | 18 | 2 | 0.876 | green                            | colorless clear liquid                         | 192° C          | -50° C | >5000 | >5000  | 68° C   | sol |
| sec-heptyl acetate              | 5921-82-4  | 158.24 | 9  | 18 | 2 | 0.874 |                                  | colorless clear liquid                         | 173° C          | no     | no    | no     | 59° C   | sol |
| ethyl phenyl acetate            | 101-97-3   | 164.20 | 10 | 12 | 2 | 1.034 | sweet floral honey               | colorless clear liquid                         | 228° C          | no     | 3300  | no     | 78° C   | sol |
| phenethyl acetate               | 103-45-7   | 164.20 | 10 | 12 | 2 | 1.034 | floral rose sweet honey fruity   | colorless clear liquid                         | 239° C          | no     | 3670  | 6210   | >110° C | sol |
| ethyl phenyl acetate            | 101-97-3   | 164.20 | 10 | 12 | 2 | 1.034 | sweet floral honey               | colorless clear liquid                         | 228° C          | no     | 3300  | no     | 78° C   | sol |
| guaiaacetyl acetate             | 613-70-7   | 166.17 | 9  | 10 | 3 | 1.099 | woody                            | colorless to pale yellow clear liquid          | 240° C          | 32° C  | no    | no     | >110° C | sol |
| cinnamyl acetate                | 103-54-8   | 176.21 | 11 | 12 | 2 | 1.055 | spicy                            | colorless to pale yellow clear liquid          | 264° C          | no     | 3300  | >5000  | >100° C | sol |
| (E)-cinnamyl acetate            | 21040-45-9 | 176.21 | 11 | 12 | 2 | 1.055 | sweet floral spicy balsam        | colorless to pale yellow clear liquid          | 264° C          | no     | no    | no     | 130° C  | sol |
| 3-phenyl propyl acetate         | 122-72-5   | 178.23 | 11 | 14 | 2 | 1.016 | balsamic                         | colorless clear liquid                         | 244° C          | no     | 4700  | >5000  | >100° C | sol |
| para-anisyl acetate             | 104-21-2   | 180.22 | 10 | 12 | 3 | 1.083 | powdery                          | colorless to pale yellow clear liquid          | 139° C@12 mm Hg | no     | 2250  | 5000   | >100° C | sol |
| (Z)-3-hexen-1-yl phenyl acetate | 42436-07-7 | 186.29 | 14 | 18 | 2 | 0.999 | green                            | colorless clear viscous liquid                 | 295° C          | no     | >5000 | >5000  | 104° C  | sol |
| carvacryl acetate               | 6380-28-5  | 192.25 | 12 | 16 | 2 | 1.002 |                                  | colorless clear liquid                         | 246° C          | 30° C  | no    | no     | 94° C   | sol |
| butyl phenyl acetate            | 122-43-0   | 192.25 | 12 | 16 | 2 | 0.994 | honey                            | colorless to pale yellow clear liquid          | 260° C          | no     | >5000 | >5000  | >110° C | sol |
| isobutyl phenyl acetate         | 102-13-6   | 192.25 | 12 | 16 | 2 | 1.000 | chocolate                        | colorless clear liquid                         | 252° C          | no     | >5000 | >5000  | 122° C  | sol |
| cuminyl acetate                 | 59230-57-8 | 192.25 | 12 | 16 | 2 | 0.999 | herbal                           | colorless to pale yellow clear liquid          | 253° C          | no     | 1450  | >5000  | >100° C | sol |
| heliotropyl acetate             | 326-61-4   | 194.18 | 10 | 10 | 4 | 1.265 | floral                           | colorless to pale yellow clear oily liquid     | 154° C@14 mm Hg | no     | 2100  | >5000  | >100° C | sol |
| carvyl acetate                  | 97-42-7    | 194.27 | 12 | 18 | 2 | 0.960 | minty                            | colorless to pale yellow clear liquid          | 116° C@10 mm Hg | no     | no    | no     | 98° C   | sol |
| (Z)-carvyl acetate              | 1205-42-1  | 194.27 | 12 | 18 | 2 | 0.960 |                                  | colorless to pale yellow clear liquid          | 300° C          | no     | no    | no     | 98° C   | sol |
| chrysanthenyl acetate           | 54324-99-1 | 194.27 | 12 | 18 | 2 | 1.030 |                                  | pale yellow clear liquid                       | 232° C          | no     | no    | no     | 85° C   | sol |
| (Z)-chrysanthenyl acetate       | 67999-48-8 | 194.27 | 12 | 18 | 2 | 1.030 |                                  |  | 232° C          | no     | no    | no     | 85° C   | sol |
| limonen-10-yl acetate           | 15111-97-4 | 194.27 | 12 | 18 | 2 | 0.972 | fruity                           | colorless to pale yellow clear liquid          | 265° C          | no     | no    | no     | no      | sol |
| bornyl acetate                  | 76-49-3    | 196.29 | 12 | 20 | 2 | 1.000 | woody pine herbal cedar spice    | colorless clear liquid                         | 230° C          | 28° C  | no    | no     | 99° C   | sol |
| isobornyl acetate               | 125-12-2   | 196.29 | 12 | 20 | 2 | 1.000 | balsamic                         | colorless clear liquid                         | 230° C          | no     | 9050  | >20000 | 88° C   | sol |
| laevo-bornyl acetate            | 5655-61-8  | 196.29 | 12 | 20 | 2 | 1.000 | balsamic                         | colorless or white clear liquid to crystals    | 223° C          | 28° C  | no    | no     | 84° C   | sol |
| linalyl acetate                 | 115-95-7   | 196.29 | 12 | 20 | 2 | 0.897 | sweet green citrus woody         | colorless clear liquid                         | 220° C          | no     | 2790  | 5610   | 84° C   | sol |
| geranyl acetate                 | 105-87-3   | 196.29 | 12 | 20 | 2 | 0.904 | floral green waxy                | colorless clear liquid                         | 228° C          | no     | 6330  | no     | 93° C   | sol |
| neryl acetate                   | 141-12-8   | 196.29 | 12 | 20 | 2 | 0.904 | floral rose soapy citrus         | colorless to pale yellow clear liquid          | 231° C          | no     | >5000 | >5000  | 99° C   | sol |
| $\alpha$ -terpinyl acetate      | 80-26-2    | 196.29 | 12 | 20 | 2 | 0.950 | herbal lavender lime citrus      | colorless clear liquid                         | 220° C          | no     | 5075  | no     | 89° C   | sol |
| artemisyl acetate               | 3465-88-1  | 196.29 | 12 | 20 | 2 | 0.896 |                                  | colorless to pale yellow clear liquid          | 242° C          | no     | no    | no     | 79° C   | sol |
| dihydrocarvyl acetate           | 20777-49-5 | 196.29 | 12 | 20 | 2 | 0.940 | floral                           | colorless clear liquid                         | 233° C          | no     | >5000 | >5000  | 90° C   | sol |
| fenchyl acetate                 | 13851-11-1 | 196.29 | 12 | 20 | 2 | 1.000 | balsamic                         | colorless clear liquid                         | 220° C          | no     | no    | no     | 76° C   | sol |
| $\alpha$ -fenchyl acetate       | 4057-31-2  | 196.29 | 12 | 20 | 2 | 1.000 |                                  |  | 220° C          | no     | no    | no     | 87° C   | sol |
| lavandulyl acetate              | 25905-14-0 | 196.29 | 12 | 20 | 2 | 0.897 |                                  | colorless clear oily liquid                    | 229° C          | no     | no    | no     | 71° C   | sol |
| 1-para-menthen-9-yl acetate     | 28839-13-6 | 196.29 | 12 | 20 | 2 | 0.951 | herbal                           | colorless clear liquid                         | 2309° C         | no     | no    | no     | 87° C   | sol |
| citronellyl acetate             | 150-84-5   | 198.30 | 12 | 22 | 2 | 0.885 | floral green fruity citrus woody | colorless clear liquid                         | 229° C          | no     | 7200  | 4700   | 103° C  | sol |
| laevo-citronellyl acetate       | 67601-05-2 | 198.30 | 12 | 22 | 2 | 0.885 | floral                           | colorless clear liquid                         | 259° C          | no     | 6800  | >2000  | 116° C  | sol |
| (Z)-4-decen-1-yl acetate        | 67452-27-1 | 198.30 | 12 | 22 | 2 | 0.886 | floral                           | colorless clear liquid                         | 227° C          | no     | no    | no     | 66° C   | sol |
| menthyl acetate                 | 89-48-5    | 198.30 | 12 | 22 | 2 | 0.920 | minty                            | colorless clear liquid                         | 228° C          | 23° C  | no    | no     | 92° C   | sol |
| dextro,laevo-menthyl acetate    | 16409-45-3 | 198.30 | 12 | 22 | 2 | 0.920 | mentholic                        | colorless clear liquid                         | 228° C          | no     | 7620  | >5000  | 92° C   | sol |
| decyl acetate                   | 112-17-4   | 200.32 | 12 | 24 | 2 | 0.870 | waxy fresh laundered cloths      | colorless clear liquid                         | 272° C          | no     | >5000 | >5000  | >110° C | sol |
| isoamyl phenyl acetate          | 102-19-2   | 206.28 | 13 | 18 | 2 | 0.988 | chocolate                        | colorless to pale yellow clear liquid          | 268° C          | no     | no    | no     | >100° C | sol |
| eugenyl acetate                 | 93-28-7    | 206.24 | 12 | 14 | 3 | 1.055 | spicy                            | colorless to pale yellow clear liquid to solid | 283° C          | 30° C  | 1670  | >5000  | >110° C | sol |
| linalool oxide acetates         | 67689-50-3 | 212.29 | 12 | 20 | 3 | 1.034 | warm fruity woody                | colorless clear liquid                         | 251° C          | no     | no    | no     | 104° C  | sol |
| 2-acetoxy-1,8-cineole           | 72257-53-5 | 212.29 | 12 | 20 | 3 | 1.050 | minty clean fresh eucalyptus     | colorless to pale yellow clear liquid          | 253° C          | no     | no    | no     | 100° C  | sol |
| hexyl phenyl acetate            | 5421-17-0  | 220.31 | 14 | 20 | 2 | 0.980 | green                            | colorless clear liquid                         | 263° C          | no     | no    | no     | >100° C | sol |
| benzyl phenyl acetate           | 102-16-9   | 226.27 | 15 | 14 | 2 | 1.114 | floral                           | colorless clear liquid                         | 318° C          | no     | no    | no     | 93° C   | sol |
| lauryl acetate                  | 112-66-3   | 228.37 | 14 | 28 | 2 | 0.867 | waxy                             | colorless clear liquid                         | 265° C          | 1° C   | >5000 | no     | >110° C | sol |
| cedryl acetate                  | 77-54-3    | 264.40 | 17 | 28 | 2 | 1.020 | woody                            | pale yellow viscous liquid                     | 201° C          | 41° C  | 44750 | >5000  | >100° C | sol |

|                                    |            |        |    |    |   |       |              |  |                 |        |        |       |         |     |
|------------------------------------|------------|--------|----|----|---|-------|--------------|--|-----------------|--------|--------|-------|---------|-----|
| farnesyl acetate                   | 29548-30-9 | 264.40 | 17 | 28 | 2 | 0.902 | floral       | colorless to pale yellow clear liquid      | 166° C@9 mm Hg  | no     | >5000  | >5000 | 110° C  | sol |
| (E,E)-farnesyl acetate             | 4128-17-0  | 264.40 | 17 | 28 | 2 | 0.902 |              | colorless to pale yellow clear liquid      | 346° C          | no     | no     | no    | 103° C  | sol |
| <b>BENZOATES</b>                   |            |        |    |    |   |       |              |  |                 |        |        |       |         |     |
| methyl benzoate                    | 93-58-3    | 136.15 | 8  | 8  | 2 | 1.069 | phenolic     | colorless clear liquid                     | 198° C          | -12° C | 1177   | no    | 83° C   | sol |
| ethyl benzoate                     | 93-89-0    | 150.17 | 9  | 10 | 2 | 1.044 | minty        | colorless clear liquid                     | 213° C          | -35° C | 2100   | no    | 88° C   | sol |
| isopropyl benzoate                 | 939-48-0   | 164.20 | 10 | 12 | 2 | 1.021 | floral       | colorless clear liquid                     | 216° C          | no     | 3730   | no    | 110° C  | sol |
| butyl benzoate                     | 136-60-7   | 178.23 | 11 | 14 | 2 | 1.007 | balsamic     | colorless clear viscous liquid             | 249° C          | -22° C | 3450   | 4000  | 106° C  | sol |
| isobutyl benzoate                  | 120-50-3   | 178.23 | 11 | 14 | 2 | 1.005 | balsamic     | colorless clear oily liquid                | 237° C          | no     | 5600   | no    | 96° C   | sol |
| prenyl benzoate                    | 8.11.5205  | 190.24 | 12 | 14 | 2 | 1.018 | balsamic     | colorless clear liquid                     | 280° C          | no     | 4700   | >5000 | 99° C   | sol |
| amyl benzoate                      | 2049-96-9  | 192.25 | 12 | 16 | 2 | 0.994 | floral       | colorless to pale yellow clear liquid      | 268° C          | no     | 6330   | >5000 | 120° C  | sol |
| isoamyl benzoate                   | 94-46-2    | 192.25 | 12 | 16 | 2 | 0.992 | balsamic     | colorless to pale yellow clear liquid      | 261° C          | no     | 6330   | >5000 | >110° C | sol |
| (Z)-3-hexen-1-yl benzoate          | 25152-85-6 | 204.26 | 13 | 16 | 2 | 1.003 | green        | colorless clear oily liquid                | 130° C@5 mm Hg  | no     | >5000  | >5000 | >100° C | sol |
| hexyl benzoate                     | 6789-88-4  | 206.28 | 13 | 18 | 2 | 0.982 | balsamic     | colorless clear liquid                     | 272° C          | no     | 12300  | 2000  | >110° C | sol |
| benzyl benzoate                    | 120-51-4   | 212.24 | 14 | 12 | 2 | 1.128 | balsamic     | colorless clear oily liquid to solid       | 323° C          | 19° C  | 1700   | 4000  | 148° C  | sol |
| phenethyl benzoate                 | 94-47-3    | 226.27 | 15 | 14 | 2 | 1.106 | floral       | colorless to pale yellow clear oily liquid | 189° C@12 mm Hg | no     | 5000   | >5000 | >100° C | sol |
| cinnamyl benzoate                  | 5320-75-2  | 238.28 | 16 | 14 | 2 | 1.120 | balsamic     | white crystals                             | 209° C@13 mm Hg | 31° C  | 4000   | no    | 176° C  | sol |
| linalyl benzoate                   | 126-64-7   | 258.36 | 17 | 22 | 2 | 0.976 | floral       | yellow to brownish clear liquid            | 263° C          | no     | >5000  | >5000 | 98° C   | sol |
| geranyl benzoate                   | 94-48-4    | 258.36 | 17 | 22 | 2 | 0.983 | balsamic     | yellow clear oily liquid                   | 305° C          | no     | >5000  | >5000 | >110° C | sol |
| eugenyl benzoate                   | 531-26-0   | 268.31 | 17 | 16 | 3 | 1.112 | spicy        | colorless to pale yellow crystals          | 360° C          | 70° C  | no     | no    | 181° C  | sol |
| <b>BUTYRATES</b>                   |            |        |    |    |   |       |              |  |                 |        |        |       |         |     |
| methyl butyrate                    | 623-42-7   | 102.13 | 5  | 10 | 2 | 0.892 | fruity       | colorless clear liquid                     | 102° C          | no     | >5000  | 3560  | 12° C   | sol |
| methyl isobutyrate                 | 547-63-7   | 102.13 | 5  | 10 | 2 | 0.888 | fruity       | colorless clear liquid                     | 92° C           | no     | 16000  | no    | 3° C    | sol |
| ethyl butyrate                     | 105-54-4   | 116.16 | 6  | 12 | 2 | 0.886 | fruity       | colorless clear liquid                     | 120° C          | no     | 13050  | >2000 | 25° C   | sol |
| ethyl isobutyrate                  | 97-62-1    | 116.16 | 6  | 12 | 2 | 0.883 | fruity       | colorless clear liquid                     | 112° C          | no     | >5000  | no    | 14° C   | sol |
| methyl 2-methyl butyrate           | 868-57-5   | 116.16 | 6  | 12 | 2 | 0.883 | fruity       | colorless clear liquid                     | 116° C          | no     | no     | no    | 32° C   | sol |
| ethyl 2-methyl butyrate            | 7452-79-1  | 130.18 | 7  | 14 | 2 | 0.879 | fruity       | colorless clear liquid                     | 132° C          | no     | no     | no    | 26° C   | sol |
| propyl butyrate                    | 105-66-8   | 130.18 | 7  | 14 | 2 | 0.882 | fruity       | colorless clear liquid                     | 142° C          | no     | 15000  | no    | 39° C   | sol |
| isopropyl butyrate                 | 638-11-9   | 130.18 | 7  | 14 | 2 | 0.879 | fruity       | colorless clear liquid                     | 130° C          | no     | no     | no    | 30° C   | sol |
| propyl isobutyrate                 | 644-49-5   | 130.18 | 7  | 14 | 2 | 0.879 | fruity       | colorless clear liquid                     | 133° C          | no     | 15000  | no    | 27° C   | sol |
| isopropyl isobutyrate              | 617-50-5   | 130.18 | 7  | 14 | 2 | 0.877 | fruity       | colorless clear liquid                     | 120° C          | no     | no     | no    | 17° C   | sol |
| grape butyrate                     | 5405-41-4  | 132.16 | 6  | 12 | 3 | 1.024 | fruity       | colorless clear viscous liquid             | 172° C          | no     | no     | no    | 57° C   | sol |
| butyl butyrate                     | 109-21-7   | 144.21 | 8  | 16 | 2 | 0.878 | fruity       | colorless clear liquid                     | 165° C          | no     | 5600   | >5000 | 49° C   | sol |
| isobutyl butyrate                  | 539-90-2   | 144.21 | 8  | 16 | 2 | 0.876 | fruity       | colorless clear liquid                     | 157° C          | no     | >5000  | >5000 | 46° C   | sol |
| butyl isobutyrate                  | 97-87-0    | 144.21 | 8  | 16 | 2 | 0.876 | fruity       | colorless clear liquid                     | 157° C          | no     | >5000  | >5000 | 46° C   | sol |
| isobutyl isobutyrate               | 97-85-8    | 144.21 | 8  | 16 | 2 | 0.874 | fruity       | colorless clear liquid                     | 147° C          | no     | 12800  | >8600 | 37° C   | sol |
| propyl 2-methyl butyrate           | 37064-20-3 | 144.21 | 8  | 16 | 2 | 0.876 |              | colorless clear liquid                     | 156° C          | no     | no     | no    | 33° C   | sol |
| isopropyl 2-methyl butyrate        | 66576-71-4 | 144.21 | 8  | 16 | 2 | 0.874 | fruity       | colorless clear liquid                     | 142° C          | no     | no     | no    | 33° C   | sol |
| prenyl butyrate                    | 71820-56-9 | 156.22 | 9  | 16 | 2 | 0.897 |              | colorless clear liquid                     | 195° C          | no     | no     | no    | 73° C   | sol |
| butyl 2-methyl butyrate            | 15706-73-7 | 158.23 | 9  | 18 | 2 | 0.874 | green        | colorless clear liquid                     | 174° C          | no     | no     | no    | 57° C   | sol |
| isobutyl 2-methyl butyrate         | 2445-67-2  | 158.23 | 9  | 18 | 2 | 0.872 | fruity       | colorless clear liquid                     | 165° C          | no     | no     | no    | 49° C   | sol |
| amyl butyrate                      | 540-18-1   | 158.23 | 9  | 18 | 2 | 0.876 | fruity       | colorless to pale yellow clear liquid      | 186° C          | no     | 12200  | 11900 | 68° C   | sol |
| isoamyl butyrate                   | 106-27-4   | 158.23 | 9  | 18 | 2 | 0.874 | fruity       | colorless clear liquid                     | 185° C          | no     | >5000  | >5000 | 57° C   | sol |
| isoamyl isobutyrate                | 2050-01-3  | 158.23 | 9  | 18 | 2 | 0.872 | fruity       | colorless to pale yellow clear liquid      | 180° C          | no     | no     | no    | 53° C   | sol |
| (E)-2-hexen-1-yl butyrate          | 53398-83-7 | 170.25 | 10 | 18 | 2 | 0.892 | green        | colorless clear liquid                     | 192° C          | no     | no     | no    | 72° C   | sol |
| (Z)-3-hexen-1-yl butyrate          | 16491-36-4 | 170.25 | 10 | 18 | 2 | 0.892 | green        | colorless clear liquid                     | 192° C          | no     | >5000  | no    | 79° C   | sol |
| (Z)-3-hexen-1-yl isobutyrate       | 41519-23-7 | 170.25 | 10 | 18 | 2 | 0.891 | fruity       | colorless clear liquid                     | 80° C@30 mm Hg  | no     | >25000 | >5000 | 67° C   | sol |
| amyl 2-methyl butyrate             | 68039-26-9 | 172.26 | 10 | 20 | 2 | 0.872 | fruity       | colorless clear liquid                     | 195° C          | no     | no     | no    | 69° C   | sol |
| isoamyl 2-methyl butyrate          | 27625-35-0 | 172.26 | 10 | 20 | 2 | 0.870 | fruity       | colorless clear liquid                     | 185° C          | no     | no     | no    | 75° C   | sol |
| hexyl butyrate                     | 2639-63-6  | 172.26 | 10 | 20 | 2 | 0.874 | green        | colorless clear liquid                     | 205° C          | no     | >5000  | >5000 | 81° C   | sol |
| hexyl isobutyrate                  | 2349-07-7  | 172.26 | 10 | 20 | 2 | 0.872 | green        | colorless clear liquid                     | 199° C          | no     | >5000  | >5000 | 73° C   | sol |
| 2-methyl butyl 2-methyl butyrate   | 2445-78-5  | 172.26 | 10 | 20 | 2 | 0.870 | fruity       | colorless clear liquid                     | 186° C          | no     | no     | no    | 67° C   | sol |
| benzyl butyrate                    | 103-37-7   | 178.27 | 11 | 14 | 2 | 1.016 | fruity       | colorless clear liquid                     | 239° C          | 21° C  | 2330   | >5000 | 107° C  | sol |
| benzyl isobutyrate                 | 103-28-6   | 178.27 | 11 | 14 | 2 | 1.014 | floral       | colorless clear liquid                     | 237° C          | no     | 2850   | no    | 99° C   | sol |
| (Z)-3-hexen-1-yl 2-methyl butyrate | 53398-85-9 | 184.28 | 11 | 20 | 2 | 0.887 | green        | colorless clear liquid                     | 192° C          | no     | no     | no    | 83° C   | sol |
| heptyl butyrate                    | 5870-93-9  | 186.29 | 11 | 22 | 2 | 0.872 | fruity       | colorless clear liquid                     | 225° C          | no     | 5000   | >5000 | 91° C   | sol |
| 2-heptyl butyrate                  | 39026-94-3 | 186.29 | 11 | 22 | 2 | 0.870 | floral spicy | colorless clear liquid                     | 210° C          | no     | no     | no    | 83° C   | sol |
| heptyl isobutyrate                 | 2349-13-5  | 186.29 | 11 | 22 | 2 | 0.870 | fruity       | colorless clear liquid                     | 212° C          | no     | no     | no    | 84° C   | sol |
| hexyl 2-methyl butyrate            | 10032-15-2 | 186.29 | 11 | 22 | 2 | 0.870 | green        | colorless clear liquid                     | 203° C          | no     | >5000  | >5000 | 84° C   | sol |

|                                       |             |        |    |    |   |       |                   |                                       |                 |    |        |       |         |     |
|---------------------------------------|-------------|--------|----|----|---|-------|-------------------|---------------------------------------|-----------------|----|--------|-------|---------|-----|
| (±)-ethyl 3-acetoxy-2-methyl butyrate | 139564-43-5 | 188.22 | 9  | 16 | 4 | 1.018 | fruity            | colorless clear liquid                | 205° C          | no | no     | no    | 68° C   | sol |
| benzyl 2-methyl butyrate              | 56423-40-6  | 192.25 | 12 | 16 | 2 | 1.000 |                   | colorless to pale yellow clear liquid | 247° C          | no | no     | no    | 99° C   | sol |
| phenethyl butyrate                    | 103-52-6    | 192.25 | 12 | 16 | 2 | 1.002 | floral            | colorless to pale yellow clear liquid | 260° C          | no | 2000   | 5000  | >100° C | sol |
| phenethyl isobutyrate                 | 103-48-0    | 192.25 | 12 | 16 | 2 | 1.000 | floral            | colorless to pale yellow clear liquid | 250° C          | no | 5200   | >5000 | 108° C  | sol |
| 1-octen-3-yl butyrate                 | 16491-54-6  | 198.30 | 12 | 22 | 2 | 0.879 | mushroom          | colorless clear liquid                | 225° C          | no | 3424   | no    | 99° C   | sol |
| heptyl 2-methyl butyrate              | 50862-12-9  | 200.32 | 12 | 24 | 2 | 0.869 | apple             | colorless clear liquid                | 232° C          | no | no     | no    | 94° C   | sol |
| octyl butyrate                        | 110-39-4    | 200.32 | 12 | 24 | 2 | 0.870 | fruity            | colorless clear liquid                | 225° C          | no | no     | no    | 103° C  | sol |
| octyl isobutyrate                     | 109-15-9    | 200.32 | 12 | 24 | 2 | 0.869 | waxy              | colorless to pale yellow clear liquid | 237° C          | no | >5000  | >5000 | 97° C   | sol |
| cinnamyl butyrate                     | 103-61-7    | 204.26 | 13 | 16 | 2 | 1.021 | balsamic          | pale yellow clear liquid              | 300° C          | no | no     | no    | >110° C | sol |
| (E)-cinnamyl butyrate                 | 78761-39-4  | 204.26 | 13 | 16 | 2 | 1.021 | balsamic          | colorless to pale yellow clear liquid | 300° C          | no | no     | no    | >110° C | sol |
| <i>p</i> -anisyl butyrate             | 6963-56-0   | 208.25 | 12 | 16 | 3 | 1.045 | fruity            | colorless clear liquid                | 270° C          | no | no     | no    | 115° C  | sol |
| octyl 2-methyl butyrate               | 29811-50-5  | 214.34 | 13 | 26 | 2 |       | waxy              | colorless clear liquid                | 250° C          | no | no     | no    | 104° C  | sol |
| myrtenyl isobutyrate                  | 29021-37-2  | 222.32 | 14 | 22 | 2 | 0.984 | fruity woody pine | colorless clear liquid                | 275° C          | no | no     | no    | 95° C   | sol |
| bornyl butyrate                       | 13109-70-1  | 224.34 | 14 | 24 | 2 | 0.980 | herbal woody      | colorless clear liquid                | 247° C          | no | no     | no    | 111° C  | sol |
| geranyl butyrate                      | 106-29-6    | 224.34 | 14 | 24 | 2 | 0.897 | fruity            | colorless to pale yellow clear liquid | 252° C          | no | 10660  | 5000  | >100° C | sol |
| geranyl isobutyrate                   | 2345-26-8   | 224.34 | 14 | 24 | 2 | 0.896 | floral            | colorless to pale yellow clear liquid | 245° C          | no | >5000  | >5000 | >100° C | sol |
| linalyl butyrate                      | 78-36-4     | 224.34 | 14 | 24 | 2 | 0.891 | floral            | colorless to pale yellow clear liquid | 232° C          | no | no     | no    | 103° C  | sol |
| linalyl isobutyrate                   | 78-35-3     | 224.34 | 14 | 24 | 2 | 0.890 | fruity            | colorless to pale yellow clear liquid | 229° C          | no | >36300 | >5000 | 72° C   | sol |
| neryl isobutyrate                     | 2345-24-6   | 224.34 | 14 | 24 | 2 | 0.896 | fruity            | colorless clear liquid                | 229° C          | no | >5000  | >5000 | >110° C | sol |
| terpinyl butyrate                     | 2153-28-8   | 224.34 | 14 | 24 | 2 | 0.946 | balsamic          | colorless to pale yellow clear liquid | 224° C          | no | no     | no    | >100° C | sol |
| citronellyl butyrate                  | 141-16-2    | 226.36 | 14 | 26 | 2 | 0.881 | floral            | colorless clear liquid                | 245° C          | no | >5000  | no    | 113° C  | sol |
| citronellyl isobutyrate               | 97-89-2     | 226.36 | 14 | 26 | 2 | 0.879 | fruity            | colorless clear liquid                | 249° C          | no | 5000   | no    | >100° C | sol |
| rhodinyl butyrate                     | 141-15-1    | 226.36 | 14 | 26 | 2 | 0.876 | floral            | colorless to pale yellow clear liquid | 137° C@13 mm Hg | no | >5000  | no    | >100° C | sol |
| decyl butyrate                        | 5454-09-1   | 228.37 | 14 | 28 | 2 | 0.867 | fruity            | colorless clear liquid                | 270° C          | no | 9800   | no    | >110° C | sol |
| geranyl 2-ethyl butyrate              | 73019-14-4  | 252.39 | 16 | 28 | 2 | 0.890 |                   | colorless to pale yellow clear liquid | 328° C          | no | >8000  | no    | 98° C   | sol |

#### HEPTANOATES

|                    |            |        |    |    |   |       |                                     |                                       |        |    |        |       |        |     |
|--------------------|------------|--------|----|----|---|-------|-------------------------------------|---------------------------------------|--------|----|--------|-------|--------|-----|
| methyl heptanoate  | 106-73-0   | 144.21 | 8  | 16 | 2 | 0.878 | sweet fruit green waxy floral berry | colorless clear liquid                | 172° C | no | >5000  | >5000 | 53° C  | sol |
| ethyl heptanoate   | 106-30-9   | 158.23 | 9  | 18 | 2 | 0.876 | fruity pineapple cognac rum wine    | colorless clear liquid                | 188° C | no | >34640 | >5000 | 66° C  | sol |
| propyl heptanoate  | 7778-87-2  | 172.26 | 10 | 20 | 2 | 0.874 | sweet ripe fruity apple pear        | colorless clear liquid                | 207° C | no | no     | no    | 77° C  | sol |
| butyl heptanoate   | 5454-28-4  | 186.29 | 11 | 22 | 2 | 0.872 | cut grass herbal fruity apple       | colorless clear liquid                | 227° C | no | no     | no    | 88° C  | sol |
| isoamyl heptanoate | 109-25-1   | 200.32 | 12 | 24 | 2 | 0.869 | fruity herbal grassy banana         | colorless clear liquid                | 225° C | no | no     | no    | 88° C  | sol |
| geranyl heptanoate | 73019-15-5 | 266.42 | 17 | 30 | 2 | 0.889 |                                     | colorless to pale yellow clear liquid | 349° C | no | no     | no    | 102° C | sol |

#### HEXANOATES

|                              |            |        |    |    |   |       |                                     |                                       |                 |    |       |       |         |     |
|------------------------------|------------|--------|----|----|---|-------|-------------------------------------|---------------------------------------|-----------------|----|-------|-------|---------|-----|
| methyl hexanoate             | 106-70-7   | 130.18 | 7  | 14 | 2 | 0.882 | pineapple ether                     | colorless to pale yellow clear liquid | 149° C          | no | >5000 | >5000 | 45° C   | sol |
| ethyl hexanoate              | 123-66-0   | 144.21 | 8  | 16 | 2 | 0.878 | fruity                              |                                       | 167° C          | no | no    | no    | 49° C   | sol |
| pineapple hydroxyhexanoate   | 21188-58-9 | 146.18 | 7  | 14 | 3 | 1.005 | fruity                              | colorless to pale yellow clear liquid | 220° C          | no | no    | no    | 85° C   | sol |
| allyl hexanoate              | 123-68-2   | 156.22 | 9  | 16 | 2 | 0.889 | fruity                              | colorless to pale yellow clear liquid | 190° C          | no | 218   | 300   | 66° C   | sol |
| propyl hexanoate             | 626-77-7   | 158.24 | 9  | 18 | 2 | 0.876 | fruity                              | colorless clear liquid                | 187° C          | no | no    | no    | 52° C   | sol |
| isopropyl hexanoate          | 2311-46-8  | 158.24 | 9  | 18 | 2 | 0.874 | fruity                              | colorless clear liquid                | 172° C          | no | no    | no    | 49° C   | sol |
| ethyl 3-hydroxyhexanoate     | 2305-25-1  | 160.21 | 8  | 16 | 3 | 0.989 | citrus pineapple grape fruity       | colorless to pale yellow clear liquid | 102° C@14 mm Hg | no | no    | no    | 94° C   | sol |
| butyl hexanoate              | 626-82-4   | 172.26 | 10 | 20 | 2 | 0.874 | fruity berry pineapple wine         | colorless clear liquid                | 208° C          | no | >5000 | >5000 | 79° C   | sol |
| isobutyl hexanoate           | 105-79-3   | 172.26 | 10 | 20 | 2 | 0.872 | sweet fruity pineapple green        | colorless clear liquid                | 177° C          | no | >5000 | no    | 76° C   | sol |
| amyl hexanoate               | 540-07-8   | 186.29 | 11 | 22 | 2 | 0.872 | sweet green fruity estry pineapple  | colorless clear liquid                | 226° C          | no | >5000 | >5000 | 91° C   | sol |
| methyl 5-acetoxyhexanoate    | 35234-22-1 | 188.22 | 9  | 16 | 4 | 1.020 | fruity                              | colorless clear liquid                | 195° C          | no | no    | no    | 102° C  | sol |
| isoamyl hexanoate            | 2198-61-0  | 186.29 | 11 | 22 | 2 | 0.870 | fruity banana apple pineapple green | colorless clear liquid                | 221° C          | no | >5000 | >5000 | 85° C   | sol |
| (E)-2-hexen-1-yl hexanoate   | 53398-86-0 | 198.30 | 12 | 22 | 2 | 0.886 | sweet fruity green                  | colorless clear liquid                | 125° C@25 mm Hg | no | no    | no    | 104° C  | sol |
| (Z)-3-hexen-1-yl hexanoate   | 31501-11-8 | 198.30 | 12 | 22 | 2 | 0.886 | green                               | colorless clear liquid                | 223° C          | no | >5000 | 5000  | 104° C  | sol |
| hexyl hexanoate              | 6378-65-0  | 200.32 | 12 | 24 | 2 | 0.870 | green                               | colorless clear oily liquid           | 245° C          | no | no    | no    | 99° C   | sol |
| heptyl hexanoate             | 6976-72-3  | 214.34 | 13 | 26 | 2 | 0.869 | damp green sappy freshly            | colorless clear liquid                | 259° C          | no | no    | no    | 109° C  | sol |
| <i>rac</i> -heptyl hexanoate | 6624-58-4  | 214.34 | 13 | 26 | 2 | 0.867 |                                     | colorless clear liquid                | 249° C          | no | no    | no    | 104° C  | sol |
| phenethyl hexanoate          | 6290-37-5  | 220.31 | 14 | 20 | 2 | 0.880 | sweet honey floral waxy woody       | colorless clear liquid                |                 | no | no    | no    | >100° C | sol |
| octyl hexanoate              | 4887-30-3  | 228.37 | 14 | 28 | 2 | 0.867 |                                     | colorless clear liquid                | 275° C          | no | no    | no    | 120° C  | sol |
| <i>p</i> -anisyl hexanoate   | 6624-60-8  | 236.31 | 14 | 20 | 3 | 1.017 |                                     |                                       | 320° C          | no | no    | no    | 131° C  | sol |
| geranyl hexanoate            | 10032-02-7 | 252.39 | 16 | 28 | 2 | 0.891 | rose geranium fruity waxy           | colorless clear oily liquid           | 240° C          | no | >5000 | no    | >100° C | sol |
| linalyl hexanoate            | 7779-23-9  | 252.39 | 16 | 28 | 2 | 0.886 | green warm fruity animal pear       | colorless clear oily liquid           | 252° C          | no | no    | no    | 81° C   | sol |
| neryl hexanoate              | 68310-59-8 | 252.39 | 16 | 28 | 2 | 0.891 |                                     |                                       |                 | no | no    | no    | 101° C  | sol |

#### NONANOATES

|                  |           |        |    |    |   |       |                                 |                             |        |        |    |    |       |     |
|------------------|-----------|--------|----|----|---|-------|---------------------------------|-----------------------------|--------|--------|----|----|-------|-----|
| methyl nonanoate | 1731-84-6 | 172.26 | 10 | 20 | 2 | 0.874 | sweet fruity pear waxy tropical | colorless clear oily liquid | 214° C | -34° C | no | no | 84° C | sol |
|------------------|-----------|--------|----|----|---|-------|---------------------------------|-----------------------------|--------|--------|----|----|-------|-----|

|                   |           |        |    |    |   |       |                                      |                             |        |    |        |    |         |     |
|-------------------|-----------|--------|----|----|---|-------|--------------------------------------|-----------------------------|--------|----|--------|----|---------|-----|
| ethyl nonanoate   | 123-29-5  | 186.29 | 11 | 22 | 2 | 0.872 | fruity rose waxy rum wine            | colorless clear liquid      | 229° C | no | >43000 | no | 77° C   | sol |
| benzyl hexanoate  | 6938-45-0 | 206.28 | 13 | 18 | 2 | 0.990 | green apricot fruity gardenia jasmín | colorless clear liquid      | 275° C | no | no     | no | 105° C  | sol |
| isoamyl nonanoate | 7779-70-6 | 228.39 | 14 | 28 | 2 | 0.866 | fruity oily apricot floral           | colorless clear oily liquid | 260° C | no | no     | no | >110° C | sol |

#### OCTANOATES

|                            |            |        |    |    |   |       |                                     |  |        |        |       |       |         |     |
|----------------------------|------------|--------|----|----|---|-------|-------------------------------------|--|--------|--------|-------|-------|---------|-----|
| methyl octanoate           | 111-11-5   | 158.24 | 9  | 18 | 2 | 0.876 | waxy green sweet orange aldehydic   | colorless clear oily liquid                | 195° C | no     | no    | no    | 73° C   | sol |
| ethyl octanoate            | 106-32-1   | 172.26 | 10 | 20 | 2 | 0.874 | fruity wine waxy sweet apricot      | colorless clear liquid                     | 207° C | no     | 25960 | no    | 75° C   | sol |
| isoamyl octanoate          | 2035-99-6  | 214.34 | 13 | 26 | 2 | 0.867 | sweet oily fruity green soapy       | colorless clear liquid                     | 267° C | no     | >5000 | >5000 | >110° C | sol |
| (Z)-3-hexen-1-yl octanoate | 61444-41-5 | 226.36 | 14 | 26 | 2 | 0.881 | faint green slightly metallic       | colorless clear liquid                     | 292° C | no     | no    | no    | 93° C   | sol |
| hexyl octanoate            | 1117-55-1  | 228.37 | 14 | 28 | 2 | 0.867 | fruity green waxy berry apple ester | colorless clear liquid                     | 307° C | -31° C | >5000 | >5000 | >110° C | sol |
| heptyl octanoate           | 4265-97-8  | 242.40 | 15 | 30 | 2 | 0.866 | waxy oily green fresh               | colorless clear oily liquid                | 291° C | -10° C | no    | no    | 130° C  | sol |
| phenethyl octanoate        | 5457-70-5  | 248.36 | 16 | 24 | 2 | 0.963 | sweet waxy green cocoa fruity       |  | 295° C | no     | no    | no    | >110° C | sol |
| octyl octanoate            | 2306-88-9  | 256.42 | 16 | 32 | 2 | 0.865 | coconut oily fruity                 | colorless clear liquid                     | 307° C | -17° C | no    | no    | 139° C  | sol |
| nonyl octanoate            | 7786-48-3  | 270.45 | 17 | 24 | 2 | 0.865 | sweet rose mushroom floral cognac   | colorless clear oily liquid                | 315° C | no     | no    | no    | 149° C  | sol |
| geranyl octanoate          | 51532-26-4 | 280.45 | 18 | 32 | 2 | 0.887 | herbal rose fruity                  | colorless clear liquid                     | 305° C | no     | no    | no    | >100° C | sol |
| linalyl octanoate          | 10024-64-3 | 280.45 | 18 | 32 | 2 | 0.882 | dry fruity herbal sweet green       | colorless to pale yellow clear oily liquid |        | no     | no    | no    | >93° C  | sol |

#### PROPIONATES

|                             |            |        |    |    |   |       |  |                                       |                 |    |       |        |         |     |
|-----------------------------|------------|--------|----|----|---|-------|--|---------------------------------------|-----------------|----|-------|--------|---------|-----|
| methyl propionate           | 554-12-1   | 88.11  | 4  | 8  | 2 | 0.898 | fresh harsh rum fruity strawberry      | colorless clear liquid                | 80° C           | no | 5000  | >5000  | 6° C    | sol |
| ethyl propionate            | 105-37-3   | 102.13 | 5  | 10 | 2 | 0.891 | fruity                                 | colorless clear liquid                | 99° C           | no | 3500  | >5000  | 12° C   | sol |
| propyl propionate           | 106-36-5   | 116.16 | 6  | 12 | 2 | 0.886 | sharp chemical pungent                 | colorless to pale yellow clear liquid | 123° C          | no | 10331 | >14128 | 19° C   | sol |
| isopropyl propionate        | 637-78-5   | 116.16 | 6  | 12 | 2 | 0.883 | fruity ether sweet pineapple           | colorless clear liquid                | 109° C          | no | no    | no     | 17° C   | sol |
| butyl propionate            | 590-01-2   | 130.38 | 7  | 14 | 2 | 0.882 | earthy sweet weak rose                 | colorless clear liquid                | 145° C          | no | 5000  | >14000 | 38° C   | sol |
| isobutyl propionate         | 540-42-1   | 130.38 | 7  | 14 | 2 | 0.879 | fruity green ether sweet               | colorless clear liquid                | 138° C          | no | 5599  | no     | 27° C   | sol |
| isoamyl propionate          | 105-68-0   | 144.21 | 8  | 16 | 2 | 0.876 | sweet fruity banana pineapple          | colorless clear liquid                | 158° C          | no | >5000 | >5000  | 48° C   | sol |
| (E)-2-hexen-1-yl propionate | 53398-80-4 | 156.22 | 9  | 16 | 2 | 0.896 | green                                  | colorless clear liquid                | 91° C@20 mm Hg  | no | >5000 | >5000  | 66° C   | sol |
| (Z)-3-hexen-1-yl propionate | 33467-74-2 | 156.22 | 9  | 16 | 2 | 0.896 | green                                  | colorless clear liquid                | 181° C          | no | >5000 | >5000  | 60° C   | sol |
| hexyl propionate            | 2445-76-3  | 158.24 | 9  | 18 | 2 | 0.876 | pear green fruity musty                | colorless clear liquid                | 180° C          | no | >5000 | >5000  | 65° C   | sol |
| benzyl propionate           | 122-63-4   | 164.32 | 10 | 12 | 2 | 1.034 | sweet fruity apple banana              | colorless clear liquid                | 222° C          | no | 3300  | >5000  | >110° C | sol |
| phenethyl propionate        | 122-70-3   | 178.23 | 11 | 14 | 2 | 1.016 | floral red rose fruity honey           | colorless to pale yellow clear liquid | 245° C          | no | 15000 | >5000  | >100° C | sol |
| styrallyl propionate        | 120-45-6   | 178.23 | 11 | 14 | 2 | 1.012 | fresh sweet floral rose gardenia       | colorless clear liquid                | 92° C@5 mm Hg   | no | 5200  | >5000  | 94° C   | sol |
| octyl propionate            | 142-60-9   | 186.29 | 11 | 22 | 2 | 0.872 | sweet fruity mushroom floral           | colorless clear liquid                | 228° C          | no | no    | no     | 99° C   | sol |
| cinnamyl propionate         | 103-56-0   | 190.24 | 12 | 14 | 2 | 1.037 | sweet spicy fruity balsam              | colorless to pale yellow clear liquid | 288° C          | no | 3400  | >5000  | >100° C | sol |
| p-anisyl propionate         | 7549-33-9  | 194.23 | 11 | 14 | 3 | 1.062 | herbal fruity cherry peach             | pale yellow clear liquid              | 277° C          | no | 3330  | >5000  | >110° C | sol |
| isobornyl propionate        | 2756-56-1  | 210.31 | 13 | 22 | 2 | 0.990 | pungent pine camphor woody             | colorless clear liquid                | 245° C          | no | no    | no     | 99° C   | sol |
| geranyl propionate          | 105-90-8   | 210.31 | 13 | 22 | 2 | 0.900 | floral fresh waxy fruity rose tropical | colorless clear liquid                | 253° C          | no | >5000 | >5000  | >110° C | sol |
| linalyl propionate          | 144-39-8   | 210.31 | 13 | 22 | 2 | 0.894 | fresh bergamot lily woody berry rum    | colorless clear liquid                | 226° C          | no | >5000 | >5000  | 97° C   | sol |
| neryl propionate            | 105-91-9   | 210.31 | 13 | 22 | 2 | 0.900 | fruity floral green jammy rose         | colorless clear liquid                | 233° C          | no | >5000 | >5000  | 110° C  | sol |
| terpinyl propionate         | 80-27-3    | 210.31 | 13 | 22 | 2 | 0.953 | green woody citrus sweet tropical      | colorless to pale yellow clear liquid | 258° C          | no | no    | no     | 86° C   | sol |
| citronellyl propionate      | 141-14-0   | 212.32 | 13 | 24 | 2 | 0.883 | floral green waxy fruity rose citrus   | colorless clear liquid                | 122° C          | no | >5000 | >5000  | >100° C | sol |
| decyl propionate            | 5454-19-3  | 214.34 | 13 | 26 | 2 | 0.864 | ether rum fruity fatty cognac          | colorless clear liquid                | 139° C@15 mm Hg | no | no    | no     | 107° C  | sol |

#### SALICYLATES

|                     |           |        |    |    |   |       |          |  |        |       |       |       |         |     |
|---------------------|-----------|--------|----|----|---|-------|----------|--|--------|-------|-------|-------|---------|-----|
| methyl salicylate   | 119-36-8  | 152.15 | 8  | 8  | 3 | 1.209 | minty    | colorless to pink clear liquid                 | 223° C | -7° C | 1300  | no    | 96° C   | sol |
| ethyl salicylate    | 118-61-6  | 166.17 | 9  | 10 | 3 | 1.168 | minty    | colorless clear liquid                         | 234° C | 4° C  | 1320  | >5000 | 107° C  | sol |
| dimethyl salicylate | 606-45-1  | 188.17 | 9  | 10 | 3 | 1.098 | herbal   | colorless clear liquid                         | 255° C | 48° C | 3800  | >5000 | >100° C | sol |
| amyl salicylate     | 2050-08-0 | 208.25 | 12 | 16 | 3 | 1.085 | floral   | colorless to pale yellow clear liquid          | 276° C | no    | no    | no    | >100° C | sol |
| hexyl salicylate    | 6259-76-3 | 222.28 | 13 | 18 | 3 | 1.067 | herbal   | colorless clear oily liquid                    | 290° C | no    | >5000 | >5000 | >100° C | sol |
| benzyl salicylate   | 118-58-1  | 228.24 | 14 | 12 | 3 | 1.224 | balsamic | colorless to pale yellow clear liquid to solid | 208° C | 22° C | 2227  | 14150 | >100° C | sol |

#### VALERATES

|                          |            |        |   |    |   |       |          |                                       |        |    |       |       |       |     |
|--------------------------|------------|--------|---|----|---|-------|----------|---------------------------------------|--------|----|-------|-------|-------|-----|
| methyl valerate          | 624-24-8   | 116.16 | 6 | 12 | 2 | 0.886 | green    | colorless clear liquid                | 118° C | no | >5000 | no    | 22° C | sol |
| methyl isovalerate       | 556-24-1   | 116.16 | 6 | 12 | 2 | 0.883 | fruity   | colorless clear liquid                | 114° C | no | 5693  | 5690  | 14° C | sol |
| ethyl valerate           | 539-82-2   | 130.18 | 7 | 14 | 2 | 0.882 | fruity   | colorless to pale yellow clear liquid | 144° C | no | no    | no    | 39° C | sol |
| ethyl isovalerate        | 108-64-5   | 130.18 | 7 | 14 | 2 | 0.879 | fruity   | colorless to pale yellow clear liquid | 132° C | no | >5000 | >5000 | 35° C | sol |
| methyl 4-methyl valerate | 2412-80-8  | 130.18 | 7 | 14 | 2 | 0.879 | fruity   | colorless to pale yellow clear liquid | 139° C | no | no    | no    | 39° C | sol |
| propyl valerate          | 141-06-0   | 144.21 | 8 | 16 | 2 | 0.878 | ethereal | colorless to pale yellow clear liquid | 167° C | no | no    | no    | 38° C | sol |
| propyl isovalerate       | 557-00-6   | 144.21 | 8 | 16 | 2 | 0.876 | fruity   | colorless clear liquid                | 156° C | no | 8220  | no    | 32° C | sol |
| isopropyl isovalerate    | 32665-23-9 | 144.21 | 8 | 16 | 2 | 0.874 | fruity   | colorless clear liquid                | 142° C | no | no    | no    | 31° C | sol |
| butyl valerate           | 591-68-4   | 158.24 | 9 | 18 | 2 | 0.876 | fruity   | colorless clear liquid                | 186° C | no | no    | no    | 67° C | sol |
| isobutyl valerate        | 10588-10-0 | 158.24 | 9 | 18 | 2 | 0.874 | fruity   | colorless clear liquid                | 170° C | no | no    | no    | 56° C | sol |
| butyl isovalerate        | 109-19-3   | 158.24 | 9 | 18 | 2 | 0.874 | fruity   | colorless to pale yellow clear liquid | 174° C | no | >5000 | >5000 | 56° C | sol |

|                                   |            |        |    |    |   |       |                          |                                       |                  |       |       |       |         |     |
|-----------------------------------|------------|--------|----|----|---|-------|--------------------------|---------------------------------------|------------------|-------|-------|-------|---------|-----|
| isobutyl isovalerate              | 589-59-3   | 158.24 | 9  | 18 | 2 | 0.872 | fruity                   | colorless to pale yellow clear liquid | 142° C           | no    | 6970  | >5000 | 39° C   | sol |
| ethyl 2-hydroxy-3-methyl valerate | 24323-38-4 | 160.21 | 8  | 16 | 3 | 0.986 | fruity                   | colorless clear liquid                | 205° C           | no    | no    | no    | 74° C   | sol |
| amyl isovalerate                  | 25415-62-7 | 172.26 | 10 | 20 | 2 | 0.872 | fruity                   | colorless clear liquid                | 170° C           | no    | no    | no    | 71° C   | sol |
| isoamyl valerate                  | 2050-09-1  | 172.26 | 10 | 20 | 2 | 0.872 | fruity                   | colorless clear liquid                | 186° C           | no    | no    | no    | 65° C   | sol |
| isoamyl isovalerate               | 659-70-1   | 172.26 | 10 | 20 | 2 | 0.870 | fruity                   | colorless clear liquid                | 192° C           | no    | 13956 | 5000  | 67° C   | sol |
| 2-methyl butyl isovalerate        | 2445-77-4  | 172.26 | 10 | 20 | 2 | 0.870 | fruity                   | colorless clear liquid                | 375° C           | no    | >5000 | no    | 72° C   | sol |
| furfuryl isovalerate              | 13678-60-9 | 182.22 | 10 | 14 | 3 | 1.041 | fruity                   | colorless to pale yellow clear liquid | 98° C            | no    | no    | no    | 96° C   | sol |
| (E)-2-hexen-1-yl isovalerate      | 68698-59-9 | 184.28 | 11 | 20 | 2 | 0.887 | green                    | colorless clear liquid                | 105° C@20 mm Hg  | no    | no    | no    | 82° C   | sol |
| (Z)-3-hexen-1-yl valerate         | 35852-46-1 | 184.28 | 11 | 20 | 2 | 0.889 | green                    | colorless clear liquid                | 109° C@20 mm Hg  | no    | >5000 | 5000  | 89° C   | sol |
| (Z)-3-hexen-1-yl isovalerate      | 35154-45-1 | 184.28 | 11 | 20 | 2 | 0.887 | green                    | colorless clear liquid                | 199° C           | no    | >4900 | no    | 60° C   | sol |
| 3-hexen-1-yl isovalerate          | 10032-11-8 | 184.28 | 11 | 20 | 2 | 0.887 | sweet green apple        | colorless clear liquid                | 231° C           | no    | no    | no    | 79° C   | sol |
| hexyl valerate                    | 1117-59-5  | 186.29 | 11 | 22 | 2 | 0.872 |                          | colorless clear liquid                | 226° C           | no    | no    | no    | 88° C   | sol |
| hexyl isovalerate                 | 10032-13-0 | 186.29 | 11 | 22 | 2 | 0.870 | fruity                   | colorless clear liquid                | 215° C           | no    | >5000 | >5000 | 88° C   | sol |
| benzyl valerate                   | 10361-39-4 | 192.25 | 12 | 16 | 2 | 1.002 | fruity floral apple skin | colorless clear liquid                | 236° C           | no    | no    | no    | >100° C | sol |
| benzyl isovalerate                | 103-38-8   | 192.25 | 12 | 16 | 2 | 1.000 | fruity                   | colorless to pale yellow clear liquid | 245° C           | no    | >5000 | >5000 | >100° C | sol |
| para-cresyl isovalerate           | 55066-56-3 | 192.25 | 12 | 16 | 2 | 0.994 | tobacco                  | colorless clear oily liquid           | 103° C @ 2 mm Hg | no    | no    | no    | 98° C   | sol |
| heptyl isovalerate                | 56423-43-9 | 200.32 | 12 | 24 | 2 | 0.869 |                          | colorless clear liquid                | 231° C           | no    | no    | no    | 94° C   | sol |
| phenethyl isovalerate             | 140-26-1   | 206.28 | 13 | 18 | 2 | 0.988 | floral                   | colorless clear liquid                | 265° C           | no    | 6220  | >5000 | >100° C | sol |
| octyl valerate                    | 5451-85-4  | 214.34 | 13 | 26 | 2 | 0.869 |                          | colorless clear liquid                | 261° C           | no    | no    | no    | 109° C  | sol |
| octyl isovalerate                 | 7786-58-5  | 214.34 | 13 | 26 | 2 | 0.867 | floral                   | colorless clear liquid                | 250° C           | no    | no    | no    | >110° C | sol |
| cinnamyl isovalerate              | 140-27-2   | 218.29 | 14 | 18 | 2 | 1.006 | fermented                | colorless to pale yellow clear liquid | 314° C           | no    | 5000  | >5000 | >100° C | sol |
| isobornyl isovalerate             | 7779-73-9  | 238.37 | 15 | 26 | 2 | 0.970 | woody                    | colorless to pale yellow clear liquid | 258° C           | no    | no    | no    | 110° C  | sol |
| bornyl isovalerate                | 59672-05-8 | 238.37 | 15 | 26 | 2 | 0.970 |                          | colorless clear liquid                | 260° C           | no    | no    | no    | 117° C  | sol |
| geranyl valerate                  | 10402-47-8 | 238.37 | 15 | 26 | 2 | 0.894 | floral                   | colorless clear liquid                | 290° C           | no    | no    | no    | 93° C   | sol |
| linalyl isovalerate               | 1118-27-0  | 238.37 | 15 | 26 | 2 | 0.885 | herbal                   | colorless clear oily liquid           | 188° C           | no    | no    | no    | 89° C   | sol |
| neryl isovalerate                 | 3915-83-1  | 238.37 | 15 | 26 | 2 | 0.893 | floral                   | colorless clear liquid                | 252° C           | no    | no    | no    | 110° C  | sol |
| terpinyl valerate                 | 14481-55-1 | 238.37 | 15 | 26 | 2 | 0.940 | floral                   | colorless clear liquid                | 295° C           | no    | no    | no    | 91° C   | sol |
| citronellyl valerate              | 7540-53-6  | 240.38 | 15 | 28 | 2 | 0.879 | floral                   | colorless clear liquid                | 238° C           | no    | no    | no    | >110° C | sol |
| citronellyl isovalerate           | 68922-10-1 | 240.38 | 15 | 28 | 2 | 0.877 | floral                   | colorless clear liquid                | 237° C           | no    | no    | no    | 91° C   | sol |
| menthyl isovalerate               | 16409-46-4 | 240.38 | 15 | 28 | 2 | 0.910 | floral                   | colorless clear oily liquid           | 261° C           | no    | >5000 | >5000 | >110° C | sol |
| eugenyl isovalerate               | 61114-24-7 | 248.32 | 15 | 20 | 3 | 1.011 | spicy                    | white solid                           | 315° C           | 85° C | no    | no    | 128° C  | sol |

### ETHERS

|                               |            |        |    |    |   |       |                    |  |               |       |       |       |         |     |
|-------------------------------|------------|--------|----|----|---|-------|--------------------|--|---------------|-------|-------|-------|---------|-----|
| sec-butyl ethyl ether         | 2679-87-0  | 102.17 | 6  | 14 | 1 | 0.760 |                    | colorless clear liquid                     | 81° C         | no    | no    | no    | no      | sol |
| anisole                       | 100-66-3   | 108.14 | 7  | 8  | 1 | 0.953 | phenolic           | colorless clear liquid                     | 155° C        | 38° C | 3700  | no    | 52° C   | sol |
| furfuryl methyl ether         | 13679-46-4 | 112.13 | 6  | 8  | 2 | 1.006 | coffee             | colorless to yellow clear liquid           | 132° C        | no    | no    | no    | 22° C   | sol |
| methyl hexyl ether            | 4747-07-3  | 116.20 | 7  | 16 | 1 | 0.772 | herbal             | colorless clear liquid                     | 126° C        | no    | no    | no    | 23° C   | sol |
| benzyl methyl ether           | 538-86-3   | 122.16 | 8  | 10 | 1 | 0.949 | fruity             | pale yellow clear liquid                   | 170° C        | no    | no    | no    | 54° C   | sol |
| hydroquinone monomethyl ether | 150-76-5   | 124.14 | 7  | 8  | 2 | 1.109 |                    | white crystalline powder                   | 244° C        | 54° C | 1600  | no    | 121° C  | sol |
| benzyl ethyl ether            | 539-30-0   | 136.19 | 9  | 12 | 1 | 0.938 | fruity             | colorless clear oily liquid                | 185° C        | no    | no    | no    | 62° C   | sol |
| hydroquinone monoethyl ether  | 622-62-8   | 138.16 | 8  | 10 | 2 | 1.076 | animal             | white crystals                             | 246° C        | 66° C | no    | no    | 124° C  | sol |
| estragole (methyl chavicol)   | 140-67-0   | 148.20 | 10 | 12 | 1 | 0.938 | anise              | colorless to pale yellow clear liquid      | 215° C        | no    | 1230  | >5000 | 81° C   | sol |
| dill ether                    | 74410-10-9 | 152.23 | 10 | 16 | 1 | 0.933 | herbal             |  | 207° C        | no    | no    | no    | 73° C   | sol |
| carvacryl methyl ether        | 6379-73-3  | 164.24 | 11 | 16 | 1 | 0.913 | herbal spicy leafy | colorless to pale yellow clear liquid      | 217° C        | no    | no    | no    | 74° C   | sol |
| thymyl methyl ether           | 1076-56-8  | 164.24 | 11 | 16 | 1 | 0.913 | herbal             | colorless clear liquid                     | 215° C        | no    | no    | no    | 92° C   | sol |
| alpha-terpinyl methyl ether   | 14576-08-0 | 168.28 | 11 | 20 | 1 | 0.884 | citrus             | colorless to pale yellow clear liquid      | 200° C        | no    | no    | no    | 83° C   | sol |
| difurfuryl ether              | 4437-22-3  | 178.18 | 10 | 10 | 3 | 1.150 | coffee             | colorless to yellow clear liquid           | 89° C@1 mm Hg | no    | 210   | no    | 106° C  | sol |
| raspberry ketone methyl ether | 104-20-1   | 178.22 | 11 | 14 | 2 | 1.010 | fruity             | colorless to pale yellow clear oily liquid | 277° C        | 8° C  | >5000 | >5000 | >110° C | sol |

### OXIDES

|                         |            |        |    |    |   |       |           |                                       |                |    |       |       |       |     |
|-------------------------|------------|--------|----|----|---|-------|-----------|---------------------------------------|----------------|----|-------|-------|-------|-----|
| mesityl oxide           | 141-79-7   | 98.14  | 6  | 10 | 1 | 0.830 | vegetable | colorless to yellow oily liquid       | 129° C         | no | 1120  | 5150  | 31° C | sol |
| chrysanthemum oxide     | 3558-60-9  | 136.19 | 9  | 12 | 1 | 0.938 | green     | colorless clear liquid                | 186° C         | no | 4100  | 3970  | 66° C | sol |
| dehydroxylinalool oxide | 13679-86-2 | 152.23 | 10 | 16 | 1 | 0.925 | herbal    | colorless clear liquid                | 167° C         | no | >1000 | no    | 46° C | sol |
| limonene oxide          | 1195-92-2  | 152.23 | 10 | 16 | 1 | 0.972 | fruity    | colorless to pale yellow clear liquid | 197° C         | no | 2700  | no    | 66° C | sol |
| nerol oxide             | 1786-08-9  | 152.23 | 10 | 16 | 1 | 0.945 | green     | colorless clear liquid                | 202° C         | no | 5000  | >5000 | 71° C | sol |
| geranic oxide           | 7392-19-0  | 154.25 | 10 | 18 | 1 | 0.880 | herbal    | colorless clear liquid                | 170° C         | no | no    | no    | 58° C | sol |
| (Z)-rose oxide          | 16409-43-1 | 154.25 | 10 | 18 | 1 | 0.909 | green     | pale yellow to yellow clear liquid    | 86° C@20 mm Hg | no | 4300  | no    | 69° C | sol |

|                               |            |        |    |    |   |       |          |                                       |                |       |       |       |         |     |
|-------------------------------|------------|--------|----|----|---|-------|----------|---------------------------------------|----------------|-------|-------|-------|---------|-----|
| carvone oxide                 | 33204-74-9 | 166.22 | 10 | 14 | 2 | 1.086 |          |                                       | 255° C         | no    | no    | no    | 107° C  | sol |
| (Z)-carvone-5,6-oxide         | 18383-49-8 | 166.22 | 10 | 14 | 2 | 1.086 | minty    | colorless clear liquid                | 105° C@5 mm Hg | no    | no    | no    | 107° C  | sol |
| piperitenone oxide            | 35178-55-3 | 166.22 | 10 | 14 | 2 | 1.112 | herbal   | colorless solid                       | 255° C         | 25° C | no    | no    | 107° C  | sol |
| linalool oxide                | 1365-19-1  | 170.25 | 10 | 18 | 2 | 1.016 | floral   | colorless clear liquid                | 188° C         | no    | 1150  | 2500  | 63° C   | sol |
| linalool oxide (furanoid)     | 60047-17-8 | 170.25 | 10 | 18 | 2 | 1.023 | balsamic | pale yellow clear liquid              | 193° C         | no    | 1150  | 2500  | 73° C   | sol |
| (E)-linalool oxide (furanoid) | 34995-77-2 | 170.25 | 10 | 18 | 2 | 1.023 | floral   | colorless clear liquid                | 201° C         | no    | no    | no    | 61° C   | sol |
| (Z)-linalool oxide (furanoid) | 5989-33-3  | 170.25 | 10 | 18 | 2 | 1.023 | floral   | colorless to pale yellow clear liquid | 190° C         | no    | no    | no    | 75° C   | sol |
| $\beta$ -caryophyllene oxide  | 1139-30-6  | 220.35 | 15 | 24 | 1 | 0.980 | woody    | pale yellow white crystalline solid   |                | 62° C | >5000 | >2000 | >100° C | sol |
| humulene oxide I              | 19888-33-6 | 220.35 | 15 | 24 | 1 | 0.907 | herbal   | colorless to pale yellow clear liquid | 282° C         | no    | no    | no    | 122° C  | sol |
| humulene oxide II             | 19888-34-7 | 220.35 | 15 | 24 | 1 | 0.907 |          | colorless to pale yellow clear liquid | 286° C         | no    | no    | no    | 123° C  | sol |
| guaiazoxide                   | 20149-50-2 | 222.37 | 15 | 26 | 1 | 0.970 |          |                                       | 261° C         | no    | no    | no    | 98° C   | sol |
| ambroxide                     | 65588-69-4 | 234.38 | 16 | 26 | 1 | 0.938 | amber    | colorless clear liquid                | 267° C         | no    | no    | no    | 100° C  | sol |
| manoyl oxide                  | 596-84-9   | 290.48 | 20 | 34 | 1 | 0.941 |          |                                       | 338° C         | no    | no    | no    | 155° C  | sol |

### ACIDS

#### SATURATED FAT ACIDS

|                        |            |        |    |    |   |       |                        |  |                  |        |        |       |         |     |
|------------------------|------------|--------|----|----|---|-------|------------------------|--|------------------|--------|--------|-------|---------|-----|
| formic acid            | 64-18-6    | 46.03  | 1  | 2  | 2 | 1.154 | acidic                 | colorless clear fuming liquid              | 101° C           | 8° C   | 1830   | no    | 69° C   | no  |
| acetic acid            | 64-19-7    | 60.05  | 2  | 4  | 2 | 1.068 | acidic                 | colorless clear liquid                     | 117° C           | 17° C  | 3310   | 1050  | 40° C   | sol |
| propionic acid         | 79-09-4    | 74.08  | 3  | 6  | 2 | 1.019 | acidic                 | colorless to pale yellow clear liquid      | 140° C           | -24° C | 2600   | 500   | 52° C   | sol |
| butyric acid           | 107-92-6   | 88.11  | 4  | 8  | 2 | 0.987 | cheesy                 | colorless clear liquid                     | 163° C           | -6° C  | 2000   | 530   | 75° C   | sol |
| isobutyric acid        | 79-31-2    | 88.11  | 4  | 8  | 2 | 0.983 | acidic                 | colorless clear liquid                     | 153° C           | -46° C | 280    | 500   | 56° C   | sol |
| 2-methyl butyric acid  | 116-53-0   | 102.13 | 5  | 10 | 2 | 0.962 | acidic                 | colorless to pale yellow clear liquid      | 177° C           | no     | 3200   | 10000 | 74° C   | sol |
| valeric acid           | 109-52-4   | 102.13 | 5  | 10 | 2 | 0.966 | cheesy                 | colorless to pale yellow clear liquid      | 185° C           | -35° C | 600    | no    | 89° C   | sol |
| isovaleric acid        | 503-74-2   | 102.13 | 5  | 10 | 2 | 0.966 | cheesy                 | colorless to pale yellow clear liquid      | 176° C           | -29° C | 2      | 310   | 71° C   | sol |
| 2-ethyl butyric acid   | 88-09-5    | 116.16 | 6  | 12 | 2 | 0.947 | acidic                 | yellow brown clear liquid                  | 193° C           | -14° C | 2200   | 520   | 88° C   | sol |
| hexanoic acid          | 142-62-1   | 116.16 | 6  | 12 | 2 | 0.950 | fatty                  | colorless to pale yellow clear oily liquid | 203° C           | -4° C  | 2050   | 630   | 104° C  | sol |
| 3-methyl valeric acid  | 105-43-1   | 116.16 | 6  | 12 | 2 | 0.947 | animal                 | colorless clear liquid                     | 197° C           | no     | no     | no    | 85° C   | sol |
| heptanoic acid         | 111-14-8   | 130.18 | 7  | 14 | 2 | 0.938 | cheesy                 | colorless clear liquid                     | 222° C           | -7° C  | 7000   | no    | >110° C | sol |
| 2-methyl hexanoic acid | 4536-23-6  | 130.18 | 7  | 14 | 2 | 0.935 | cheesy                 | colorless clear liquid                     | 210° C           | no     | no     | no    | 102° C  | sol |
| 5-methyl hexanoic acid | 628-46-6   | 130.18 | 7  | 14 | 2 | 0.935 | fatty                  | colorless clear liquid                     | 216° C           | no     | no     | no    | 102° C  | sol |
| octanoic acid          | 124-07-2   | 144.21 | 8  | 16 | 2 | 0.929 | fatty                  | colorless clear oily liquid                | 238° C           | 16° C  | 10080  | >5000 | >110° C | sol |
| 4-methyl octanoic acid | 54947-74-9 | 158.24 | 9  | 18 | 2 | 0.919 | fatty                  | colorless to pale yellow clear liquid      | 149° C@22 mm Hg  | no     | no     | no    | >110° C | sol |
| nonanoic acid          | 112-05-0   | 158.24 | 9  | 18 | 2 | 0.921 | waxy                   | colorless to pale yellow clear oily liquid | 268° C           | 32° C  | >5000  | >2000 | 100° C  | sol |
| decanoic acid          | 334-48-5   | 172.26 | 10 | 20 | 2 | 0.915 | fatty                  | white crystals                             | 269° C           | 30° C  | >10000 | no    | >100° C | sol |
| undecanoic acid        | 112-37-8   | 186.29 | 11 | 22 | 2 | 0.909 | waxy                   | colorless crystals                         | 228° C@160 mm Hg | 30° C  | no     | no    | >110° C | sol |
| lauric acid            | 143-07-7   | 200.32 | 12 | 24 | 2 | 0.905 | fatty coconut bay oil  | white waxy solid                           | 225° C@100 mmHg  | 48° C  | 12000  | no    | >110° C | sol |
| tridecanoic acid       | 638-53-9   | 214.34 | 13 | 26 | 2 | 0.901 | waxy woody             | white crystalline solid                    | 312° C           | 42° C  | no     | no    | 113° C  | sol |
| myristic acid          | 544-63-8   | 228.37 | 14 | 28 | 2 | 0.898 | waxy fatty citrus peel | white waxy solid                           | 250° C@100 mmHg  | 55° C  | 10     | no    | >110° C | sol |
| pentadecanoic acid     | 1002-84-2  | 242.40 | 15 | 30 | 2 | 0.865 | waxy                   | white solid                                | 340° C           | 52° C  | no     | no    | 113° C  | sol |
| palmitic acid          | 57-10-3    | 256.42 | 16 | 32 | 2 | 0.892 | slightly fatty waxy    | white waxy solid                           | 300° C           | 64° C  | 10     | no    | 114° C  | sol |
| stearic acid           | 57-11-4    | 284.48 | 18 | 36 | 2 | 0.888 | odorless               | white waxy powder                          | 184° C           | 68° C  | 4640   | 5     | >110° C | no  |

#### UNSATURATED FAT ACIDS

|                           |            |        |    |    |   |       |              |                                       |                 |       |       |        |         |     |
|---------------------------|------------|--------|----|----|---|-------|--------------|---------------------------------------|-----------------|-------|-------|--------|---------|-----|
| 2-butenic acid            | 3724-65-0  | 86.09  | 4  | 6  | 2 | 1.039 | burnt        | white solid                           | 185° C          | 72° C | 1000  | 600000 | 86° C   | sol |
| (E)-2-butenic acid        | 107-93-7   | 86.09  | 4  | 6  | 2 | 1.039 | milky        | white solid                           | 185° C          | 72° C | no    | no     | 88° C   | sol |
| (E)-2-pentenoic acid      | 13991-37-2 | 100.12 | 5  | 8  | 2 | 1.008 | cheesy       | colorless clear liquid                | 198° C          | 10° C | no    | no     | 102° C  | sol |
| (E)-tiglic acid           | 80-59-1    | 100.12 | 5  | 8  | 2 | 1.010 | spicy        | white crystals                        | 199° C          | 56° C | >5000 | >5000  | 102° C  | sol |
| (Z)-tiglic acid           | 565-63-9   | 100.12 | 5  | 8  | 2 | 1.010 | spicy        | pale yellow crystalline solid         | 185° C          | 45° C | no    | no     | 96° C   | sol |
| (E)-2-hexenoic acid       | 13419-69-7 | 114.14 | 6  | 10 | 2 | 0.985 | fruity       | colorless crystalline needles         | 217° C          | 31° C | no    | no     | >110° C | sol |
| 3-hexenoic acid           | 4219-24-3  | 114.14 | 6  | 10 | 2 | 0.985 |              | colorless clear liquid                | 209° C          | 11° C | no    | no     | 106° C  | sol |
| (E)-3-hexenoic acid       | 1577-18-0  | 114.14 | 6  | 10 | 2 | 0.985 | cheesy       | colorless to pale yellow clear liquid | 119° C@22 mm Hg | 11° C | no    | no     | 104° C  | sol |
| (Z)-3-hexenoic acid       | 1775-43-5  | 114.14 | 6  | 10 | 2 | 0.985 | green        | colorless to pale yellow clear liquid | 210° C          | no    | no    | no     | 99° C   | sol |
| 2-methyl-2-pentenoic acid | 3142-72-1  | 114.14 | 6  | 10 | 2 | 0.987 | acidic       | colorless to pale yellow crystals     | 125° C@30 mm Hg | 25° C | no    | no     | 108° C  | sol |
| 4-methyl-2-pentenoic acid | 10321-71-8 | 114.14 | 6  | 10 | 2 | 0.982 | fatty fruity | pale yellow clear liquid              | 204° C          | 35° C | no    | no     | 106° C  | sol |
| (E)-2-octenoic acid       | 1871-67-6  | 142.20 | 8  | 14 | 2 | 0.955 | acidic       | colorless clear liquid                | 154° C@22 mm Hg | 6° C  | no    | no     | >100° C | sol |
| (E)-2-decenoic acid       | 334-49-6   | 170.25 | 10 | 18 | 2 | 0.936 | fruity       | colorless clear liquid                | 278° C          | 12° C | no    | no     | >110° C | sol |
| 2-nonenic acid            | 3760-11-0  | 156.22 | 9  | 16 | 2 | 0.944 | fatty        | colorless clear liquid                | 173° C@20 mm Hg | no    | no    | no     | >100° C | sol |
| 4-decenoic acid           | 26303-90-2 | 170.25 | 10 | 18 | 2 | 0.936 | fruity       | colorless clear liquid                |                 |       | no    | no     | 172° C  | sol |

|                                     |            |        |    |    |   |       |                             |   |                  |               |       |        |         |     |
|-------------------------------------|------------|--------|----|----|---|-------|-----------------------------|---|------------------|---------------|-------|--------|---------|-----|
| 3,7-dimethyl-6-octenoic acid        | 502-47-6   | 170.25 | 10 | 18 | 2 | 0.935 | green                       | colorless to yellow clear liquid                    | 126° C@4 mm Hg   | no            | 2610  | 450    | >110° C | sol |
| linoleic acid                       | 60-33-3    | 280.44 | 18 | 32 | 2 | 0.911 |                             | colorless to pale yellow clear oily liquid          | 366° C           | -5° C         | 50    | no     | >110° C | sol |
| oleic acid                          | 112-80-1   | 282.46 | 18 | 34 | 2 | 0.899 | faint fatty waxy lard fried | colorless to pale yellow liquid                     | 195° C@1.2 mm Hg | 13° C@0 mm Hg | 5000  | no     | 113° C  | no  |
| <b>OTHER ACIDS</b>                  |            |        |    |    |   |       |                             |   |                  |               |       |        |         |     |
| pyruvic acid                        | 127-17-3   | 88.06  | 3  | 4  | 3 | 1.261 | acidic                      | colorless to pale yellow green clear viscous liquid | 165° C           | 12° C         | no    | no     | 84° C   | sol |
| lactic acid                         | 50-21-5    | 90.10  | 3  | 6  | 3 | 1.276 | odorless                    | colorless clear liquid                              |                  | 17° C         | 3543  | >2000  | >110° C | sol |
| fumaric acid                        | 110-17-8   | 116.07 | 4  | 4  | 4 | 1.499 | odorless                    | white colorless crystals                            | 299° C           | no            | 9300  | 5000   | >110° C | sol |
| levulinic acid                      | 123-76-2   | 116.12 | 5  | 8  | 3 | 1.129 | caramellic                  | yellow to brown clear liquid                        | 245° C           | 31° C         | 1850  | >5000  | 138° C  | sol |
| succinic acid                       | 110-15-6   | 118.09 | 4  | 6  | 4 | 1.408 | odorless                    | colorless crystals                                  | 235° C           | 187° C        | 2260  | no     | 111° C  | sol |
| benzoic acid                        | 65-85-0    | 122.12 | 7  | 6  | 2 | 1.197 | faint balsam urine          | white crystals                                      | 250° C           | 132° C        | 1700  | >10000 | 121° C  | sol |
| cyclohexyl carboxylic acid          | 98-89-5    | 128.17 | 7  | 12 | 2 | 1.079 | fruity                      | white crystalline solid                             | 232° C           | 31° C         | 3265  | no     | >110° C | sol |
| malic acid                          | 6915-15-7  | 134.09 | 4  | 6  | 5 | 1.641 | odorless                    | white crystals                                      | 306° C           | 133° C        | 3500  | no     | 153° C  | no  |
| <i>l</i> -malic acid                | 97-67-6    | 134.09 | 4  | 6  | 5 | 1.941 | odorless                    |   | 140° C           | 100° C        | 1600  | no     | 153° C  | sol |
| phenyl acetic acid                  | 103-82-2   | 136.15 | 8  | 8  | 2 | 1.164 | honey                       | white crystalline powder                            | 165° C           | 77° C         | 2250  | >5000  | 100° C  | sol |
| salicylic acid                      | 69-72-7    | 138.12 | 7  | 6  | 3 | 1.375 | faint nutty                 | white powder  | 336° C           | 160° C        | 891   | >10000 | >100° C | sol |
| cinnamic acid                       | 621-82-9   | 148.16 | 9  | 8  | 2 | 1.184 | balsamic                    | pale amber powder                                   | 299° C           | 133° C        | 2500  | no     | 189° C  | sol |
| ( <i>E</i> )-cinnamic acid          | 140-10-3   | 148.16 | 9  | 8  | 2 | 1.184 | balsamic                    | pale amber powder                                   | 300° C           | 133° C        | no    | no     | >100° C | no  |
| $\alpha$ -ketoglutaric acid         | 328-50-7   | 146.10 | 5  | 6  | 5 | 1.499 |                             | white to pale yellow crystals                       | 323° C           | 116° C        | no    | no     | no      | no  |
| 3-phenyl propionic acid             | 501-52-0   | 150.17 | 9  | 10 | 2 | 1.125 | floral                      | white crystals                                      | 280° C           | 48° C         | no    | no     | >110° C | sol |
| <i>p</i> -anisic acid               | 100-09-4   | 152.15 | 8  | 8  | 3 | 1.207 | animal                      | colorless crystals                                  | 277° C           | 185° C        | no    | no     | 185° C  | sol |
| phenoxyacetic acid                  | 122-59-8   | 152.15 | 8  | 8  | 3 | 1.221 | honey                       | colorless crystals                                  | 285° C           | 101° C        | 1500  | >5000  | 115° C  | sol |
| geranic acid                        | 459-80-3   | 168.23 | 10 | 16 | 2 | 0.960 | green                       | colorless to pale yellow clear oily liquid          | 250° C           | no            | 3700  | 1750   | 110° C  | sol |
| gallic acid                         | 149-91-7   | 170.12 | 7  | 6  | 5 | 1.749 |                             | white solid powder                                  | 500° C           | 246° C        | 5000  | no     | 271° C  | sol |
| ( <i>E</i> )-aconitic acid          | 4023-65-8  | 174.11 | 6  | 6  | 6 | 1.660 | vegetable                   | yellow crystals                                     |                  | 195° C        | no    | no     | no      | sol |
| ascorbic acid                       | 50-81-7    | 176.12 | 6  | 8  | 6 | 1.954 | odorless                    | white to yellowish powder crystals                  |                  | 192° C        | 11900 | no     | >100° C | no  |
| citric acid                         | 77-92-9    | 192.12 | 6  | 8  | 7 | 1.762 | odorless                    | white crystals                                      | 310° C           | 133° C        | 3000  | no     | >110° C | no  |
| 2-(4-methoxyphenoxy) propionic acid | 13794-15-5 | 196.20 | 10 | 12 | 4 | 1.185 |                             | white solid   | no               | no            | no    | no     | 130° C  | sol |
| syringic acid                       | 530-57-4   | 198.17 | 9  | 10 | 5 | 1.335 |                             | white to pale tan solid powder                      | 439° C           | 204° C        | no    | no     | 155° C  | sol |
| <b>OTHERS</b>                       |            |        |    |    |   |       |                             |   |                  |               |       |        |         |     |
| xanthoxylin                         | 90-24-4    | 196.20 | 10 | 12 | 4 | 1.172 | borneol camphor             |   | no               | 82° C         | no    | no     | 141° C  | sol |
| safrrole                            | 94-59-7    | 162.19 | 10 | 10 | 2 | 1.118 | spicy                       | colorless to pale yellow clear liquid               | 233° C           | 11° C         | 1950  | >5000  | 98° C   | sol |
| myristicin                          | 607-91-0   | 192.21 | 11 | 12 | 3 | 1.137 | spice warm balsam woody     | colorless clear liquid                              | 173° C@40 mm Hg  | no            | 4260  | no     | 90° C   | sol |