

Ionization Potentials of Selected Compounds

Below is a partial list of chemicals and their ionization potentials. This list can be used to determine if a compound can be analyzed by the argon ionization mode, the helium ionization mode, or the PID mode. Compounds with an ionization potential greater than 11.5 may be analyzed by the helium ionization mode. Compounds with an IP of less than 11.5 will respond on an AID while compounds with an IP less than 10.2 can be analyzed using the PID mode if selectivity is essential. For a discussion of the different modes of operation please refer to the Modes of Operation page. Compounds with an * have been analyzed using the AIC prototype ECD as well.

Ionization Potential

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| Acetaldehyde | 10.2 |
| Acetamide | 9.8 |
| AceticAcid | 10.7 |
| Acetone | 9.7 |
| Acetonitrile | 12.2 |
| Acetylene | 11.4 |
| Acrolein | 10.1 |
| AcrylicAcid | 10.6 |
| Acrylonitrile | 10.9 |
| Allyl alcohol | 9.7 |
| Allyl chloride | 9.9 |
| Aminoethanol | 9.9 |
| Ammonia | 10.2 |
| Amyl alcohol | 10.0 |
| Aniline | 7.7 |
| Anisole | 8.2 |
| Arsine | 10.6 |
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| Benzaldehyde | 9.5 |
| Benzene | 9.3 |
| Benzonitrile | 9.6 |
| Benzylchloride | 10.2 |
| Bromobenzene | 9.0 |
| Bromochloromethane | 10.8 |
| Bromodichloromethane | 10.6* |
| Bromoform | 10.5* |
| Bromomethane | 10.5 |
| Butadiene,1,3- | 9.6 |
| Butane | 10.5 |
| Butanol,1- | 10.1 |
| Butene,1- | 9.5 |
| Butylacetate,n- | 10.0 |
| Butylacrylate,n- | --- |
| Butylamine | 8.7 |
| Butylbenzene,n- | 8.7 |
| Butylcellosolve | 8.8 |
| Butylmercaptan | 9.1 |
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| Carbon dioxide | 13.8 |
| Carbon disulfide | 10.1 |
| Carbon tetrachloride | 11.5* |
| Chlorine | 11.5 |
| Chloro-1,3-butadiene,2- | 8.8 |

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| Chlorodifluoromethane | 12.2 |
| Chloroethane | 11.0 |
| Chloroethanol | 10.5 |
| Chloroethyl methyl ether,2- | 10.1 |
| Chloroform | 11.4* |
| Chlorotoluene,o- | 8.8 |
| Chlorotoluene,p- | 8.7 |
| Crotonaldehyde | 9.7 |
| Cumene | 8.7 |
| Cyanogen bromide | 11.8 |
| Cyanogen chloride | 12.3 |
| Cyclohexane | 9.9 |
| Cyclohexanol | 9.8 |
| Cyclohexanone | 9.1 |
| Cyclohexene | 8.9 |
| Cyclohexylamine | 8.6 |
| Cyclopentane | 10.5 |
| Decane | 9.6 |
| Diacetone alcohol | --- |
| Dichlorodifluoromethane | 12.0 |
| Dibromoethane,1,2- | 10.4 |
| Dibromomethane | 10.4 |
| Dichlorobenzene,o- | 9.1 |
| Dichlorodifluoromethane | 11.7 |
| Dichloroethane,1,1- | 11.1* |
| Dichloroethane,1,2- | 11.0* |
| Dichloroethene,1,1- | 9.8* |
| Dichloroethene,c-1,2- | 9.7 |
| Dichloroethene,t-1,2- | 9.7 |
| Dichloropropane,1,2- | 10.9 |
| Dichloropropane,1,3- | 10.9 |
| Diesel Fuel #1 | A |
| Diesel Fuel #2 | A |
| Diethylamine | 8.0 |
| Diethylaminopropylamine,3- | --- |
| Diethylmalceate | --- |
| Dimethylacetamide,N,N- | 8.8 |
| Dimethylamine | 8.2 |
| Dimethyldisulfide | 7.4 |
| Dimethylformamide,N,N- | 9.1 |
| Dimethylhydrazine,1,1- | 7.3 |
| Dimethylsulfate | --- |
| Dioxane,1,4- | 9.2 |
| Epichlorohydrin | 10.5 |
| Ethane | 11.5 |
| Ethanol | 10.5 |
| Ethanolamine | 8.9 |
| Ethene (ethylene) | 10.5 |
| Ethoxyethanol,2- | 9.6 |
| Ethyl acetate | 10.0 |
| Ethyl acrylate | --- |
| Ethyl benzene | 8.8 |
| Ethylether | 9.5 |

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| Ethyl formate | 10.6 |
| Ethylhexylacrylate,2- | --- |
| Ethyl(S)-(-)-lactate | 10 |
| Ethyl mercaptan | 9.3 |
| Ethylsulfide | 8.4 |
| Ethylamine | 8.9 |
| Ethylene glycol | 10.2 |
| Ethylene oxide | 10.6 |
| Formaldehyde | 10.9 |
| Furfural | 9.2 |
| Gasoline #1 | A |
| Gasoline #2 | A |
| Halothane | 11.0 |
| HCFC-141B | H |
| HCFC-142B | 12.0 |
| Heptane,n- | 9.9 |
| Hexamethyldisilazane,1,1,1,3,3,3- | H |
| Hexane,n- | 10.1 |
| Hexene,1- | 9.4 |
| Hydrazine | 8.1 |
| Hydrogen | 15.4 |
| Hydrogen peroxide | 10.5 |
| Hydrogen sulfide | 10.4 |
| Iodine | 9.4 |
| Isobutane | 10.6 |
| Isobutene | 9.2 |
| Isobutyl acrylate | --- |
| Isooctane | 9.9 |
| Isopar | A |
| Isophorone | 9.1 |
| Isoprene | 8.8 |
| Isopropanol | 10.1 |
| Isopropyl acetate | 10.0 |
| Isopropyl ether | 9.2 |
| Jet fuel JP-4 | --- |
| Jet fuel JP-5 | --- |
| Jet fuel JP-8 | --- |
| Kerosene | A |
| Mesitylene | 8.4 |
| Methane | 12.5 |
| Methanol | 10.8 |
| Methyl acetate | 10.9 |
| Methyl acrylate | 9.9 |
| Methyl bromide | 10.5 |
| Methyl cellosolve | 10.1 |
| Methyl chloride | 11.2 |
| Methyl ethyl ketone | 9.5 |
| Methyl propyl ketone | 9.4 |
| Methyl-2-pyrrolidinone,N- | 9.2 |

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| Methyl salicylate | --- |
| Methyl-t-butylether | 9.2 |
| Methyl amine | 9.0 |
| Methyl cyclohexane | 9.6 |
| Methylene chloride | 11.3* |
| Methyl hydrazine | 7.7 |
| Methyl styrene | 8.2 |
| Mineral spirits | --- |
| Nitric oxide | 9.3 |
| Nitro benzene | 9.8 |
| Nitro ethane | 10.9 |
| Nitrogen dioxide | 9.8 |
| Nitromethane | 11.0 |
| Nitropropane,2- | 10.7 |
| Nonane | 9.7 |
| Octane,n- | 9.8 |
| Pentane | 10.3 |
| Perchloroethene | 9.3 |
| Phenol | 8.5 |
| Phosphine | 9.9 |
| Picoline,3- | 9.0 |
| Pinene | 8.1 |
| Propane | 10.9 |
| Propanol,n- | 10.2 |
| Propene | 9.7 |
| Propionaldehyde | 9.9 |
| Propyl acetate,n- | 10.0 |
| Propylene oxide | 10.2 |
| Pyridine | 9.2 |
| Styrene | 8.4 |
| Sulfur dioxide | 12.3 |
| Tetrachoroethane,1,1,1,2- | 11.1* |
| Tetrachloroethane,1,1,2,2- | 11.1* |
| Tetraethylorthosilicate | 9.8 |
| Tetraflouroethane,1,1,1,2- | --- |
| Tetraflouromethane | 15.3 |
| Tetrahydrofuran | 9.4 |
| Therminol | --- |
| Toluene | 8.8 |
| Trichloroethane1,1,1- | 11.0* |
| Trichloroethane,1,1,2- | 11.0* |
| Trichloroethene | 9.5* |
| Trichlorotriflouroethane,1,1,2- | 12* |
| Trichlorofluoromethane | 11.7 |
| Triethylamine | 7.5 |
| Triflouroethane,1,1,2- | 12.9 |
| Trimethylamine | 7.8 |
| Turpentine | --- |
| Undecane | 9.6 |

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|---------------------------|-----|
| Vinyl acetate | 9.2 |
| Vinyl bromide | 9.8 |
| Vinyl chloride | 10 |
| Vinyl-2-pyrrolidinone, 1- | --- |
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| Xylene,m- | 8.6 |
| Xylene,o- | 8.6 |
| Xylene,p- | 8.4 |

Notes:

H: Ionization potential for this compound is not known. However, the compound can be analyzed by HID mode if there is sufficient chromatographic resolution.

A: Ionization potential for this compound is not known. However, the compound/mixture has been analyzed by AID mode by AIC Corp.

---: Ionization potential for this compound is not known. The compound has not been analyzed by AIC Corp.