

# [Iodic acid hio3 structure](https://assignbuster.com/iodic-acid-hio3-structure/)

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* Safety:

|  |  |
| --- | --- |
| Molecular Formula  | HIO 3  |
| Average mass  | 175. 911 Da  |
| Density  |  |
| Boiling Point  |  |
| Flash Point  |  |
| Molar Refractivity  |  |
| Polarizability  |  |
| Surface Tension  |  |
| Molar Volume  |  |

* Experimental data
* Predicted – ACD/Labs
* Predicted – EPISuite
* Predicted – ChemAxon
* Experimental Physico-chemical Properties

## Experimental Melting Point:

|  |
| --- |
| 110 °C (Decomposes)Alfa Aesar  |
| 110 °COxford University Chemical Safety Data (No longer updated)More details  |
| 110 °CJean-Claude Bradley Open Melting Point Dataset15861  |
| 110 °C (Decomposes)Alfa Aesar87681, A11925  |
| 110 °CLabNetworkLN00193322  |

## Experimental Gravity:

|  |
| --- |
| 4. 629 g/mLAlfa Aesar87681, A11925  |

* Miscellaneous

## Appearance:

|  |
| --- |
| white crystalsOxford University Chemical Safety Data (No longer updated)More details  |

## Stability:

|  |
| --- |
| Stable. Incompatible with strong reducing agents, alcohols, organic materials. Light-sensitive. Oxford University Chemical Safety Data (No longer updated)More details  |

## Safety:

|  |
| --- |
| 17-20-26-36/37/39-45-60Alfa AesarA11925, 87681  |
| 5. 1Alfa AesarA11925  |
| 8/1/1934 12: 00: 00 AMAlfa AesarA11925, 87681  |
| 8-34Alfa AesarA11925  |
| Aug-34Alfa AesarA11925  |
| DangerAlfa AesarA11925  |
| DANGER: OXIDIZER, CORROSIVE, burns skin and eyesAlfa AesarA11925, 87681  |
| H272-H314Alfa AesarA11925  |
| O, CAbblis ChemicalsAB1006870  |
| P221-P210-P303+P361+P353-P305+P351+P338-P405-P501aAlfa AesarA11925  |
| Safety glasses, adequate ventilation. Oxford University Chemical Safety Data (No longer updated)More details  |

Predicted data is generated using the ACD/Labs Percepta Platform – PhysChem Module

|  |  |
| --- | --- |
| Density:  |  |
| Boiling Point:  |  |
| Vapour Pressure:  |  |
| Enthalpy of Vaporization:  |  |
| Flash Point:  |  |
| Index of Refraction:  |  |
| Molar Refractivity:  |  |
| #H bond acceptors:  | 3  |
| #H bond donors:  | 1  |
| #Freely Rotating Bonds:  | 0  |
| #Rule of 5 Violations:  |  |

|  |  |
| --- | --- |
| ACD/LogP:  |  |
| ACD/LogD (pH 5. 5):  |  |
| ACD/BCF (pH 5. 5):  |  |
| ACD/KOC (pH 5. 5):  |  |
| ACD/LogD (pH 7. 4):  |  |
| ACD/BCF (pH 7. 4):  |  |
| ACD/KOC (pH 7. 4):  |  |
| Polar Surface Area:  | 54 Å 2  |
| Polarizability:  |  |
| Surface Tension:  |  |
| Molar Volume:  |  |

Predicted data is generated using the US Environmental Protection Agency’s EPISuite™

 Log Octanol-Water Partition Coef (SRC): Log Kow (KOWWIN v1. 67 estimate) = -4. 63Boiling Pt, Melting Pt, Vapor Pressure Estimations (MPBPWIN v1. 42): Boiling Pt (deg C): 534. 21 (Adapted Stein & Brown method)Melting Pt (deg C): 212. 06 (Mean or Weighted MP)VP(mm Hg, 25 deg C): 1. 71E-013 (Modified Grain method)Subcooled liquid VP: 1. 66E-011 mm Hg (25 deg C, Mod-Grain method)Water Solubility Estimate from Log Kow (WSKOW v1. 41): Water Solubility at 25 deg C (mg/L): 1e+006log Kow used: -4. 63 (estimated)no-melting pt equation usedWater Sol Estimate from Fragments: Wat Sol (v1. 01 est) = 1e+006 mg/LECOSAR Class Program (ECOSAR v0. 99h): Class(es) found: Neutral OrganicsHenrys Law Constant (25 deg C) [HENRYWIN v3. 10]: Bond Method : IncompleteGroup Method: IncompleteHenrys LC [VP/WSol estimate using EPI values]: 3. 958E-020 atm-m3/moleLog Octanol-Air Partition Coefficient (25 deg C) [KOAWIN v1. 10]: Can Not Estimate (can not calculate HenryLC)Probability of Rapid Biodegradation (BIOWIN v4. 10): Biowin1 (Linear Model) : 0. 6638Biowin2 (Non-Linear Model) : 0. 6250Expert Survey Biodegradation Results: Biowin3 (Ultimate Survey Model): 2. 8104 (weeks )Biowin4 (Primary Survey Model) : 3. 5939 (days-weeks )MITI Biodegradation Probability: Biowin5 (MITI Linear Model) : 0. 1888Biowin6 (MITI Non-Linear Model): 0. 0722Anaerobic Biodegradation Probability: Biowin7 (Anaerobic Linear Model): 0. 8361Ready Biodegradability Prediction: NOHydrocarbon Biodegradation (BioHCwin v1. 01): Structure incompatible with current estimation method! Sorption to aerosols (25 Dec C)[AEROWIN v1. 00]: Vapor pressure (liquid/subcooled): 2. 21E-009 Pa (1. 66E-011 mm Hg)Log Koa (): not availableKp (particle/gas partition coef. (m3/ug)): Mackay model : 1. 36E+003 Octanol/air (Koa) model: not availableFraction sorbed to airborne particulates (phi): Junge-Pankow model : 1 Mackay model : 1 Octanol/air (Koa) model: not availableAtmospheric Oxidation (25 deg C) [AopWin v1. 92]: Hydroxyl Radicals Reaction: OVERALL OH Rate Constant = 0. 1400 E-12 cm3/molecule-secHalf-Life = 76. 400 Days (12-hr day; 1. 5E6 OH/cm3)Ozone Reaction: No Ozone Reaction EstimationFraction sorbed to airborne particulates (phi): 1 (Junge, Mackay)Note: the sorbed fraction may be resistant to atmospheric oxidationSoil Adsorption Coefficient (PCKOCWIN v1. 66): Koc : 35. 04Log Koc: 1. 545 Aqueous Base/Acid-Catalyzed Hydrolysis (25 deg C) [HYDROWIN v1. 67]: Rate constants can NOT be estimated for this structure! Bioaccumulation Estimates from Log Kow (BCFWIN v2. 17): Log BCF from regression-based method = 0. 500 (BCF = 3. 162)log Kow used: -4. 63 (estimated)Volatilization from Water: Henry LC: 3. 96E-020 atm-m3/mole (calculated from VP/WS)Half-Life from Model River: 1. 962E+016 hours (8. 175E+014 days)Half-Life from Model Lake : 2. 14E+017 hours (8. 918E+015 days)Removal In Wastewater Treatment: Total removal: 1. 85 percentTotal biodegradation: 0. 09 percentTotal sludge adsorption: 1. 75 percentTotal to Air: 0. 00 percent(using 10000 hr Bio P, A, S)Level III Fugacity Model: Mass Amount Half-Life Emissions(percent) (hr) (kg/hr)Air 6. 93e-008 1. 83e+003 1000 Water 39 360 1000 Soil 60. 9 720 1000 Sediment 0. 0713 3. 24e+003 0 Persistence Time: 579 hr

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