

**Table 7-1
Physical and Chemical Properties of Chemicals of Potential Concern
Hegeler Zinc Site
Danville, Illinois**

COPC	Physical Form	Physical Description	General Chemical Class	Molecular Weight (g/mol)	Organic Carbon Partition Coefficient (log K _{oc})	Octanol Water Partition Coefficient (log K _{ow})	Density @ 25°C (unitless)	Boiling Point (°C)	Melting Point (°C)	Viscosity	Water Solubility (mg/L)	Henry's Law Constant (atm-m ³ /mol)	Vapor Pressure (mm Hg)	Flash Point (°C)	Volatilization Factor (m ³ /kg)
METALS															
Antimony	Solid	Very brittle, silver-white, flaky crystalline solid	Metal	121.75	NA	NA	6.684	1635	630	NA	Insoluble	NA	1 @ 886 deg C	NA	NA
Arsenic	Solid	Gray, brittle, crystalline semimetallic solid	Metal	74.92	NA	NA	5.778	NA	NA	NA	Insoluble	NA	Temp-specific	NA	NA
Barium	Solid	Yellowish or silver-white, slightly lustrous lumps; body-centered cubic structure	Metal	137.33	NA	NA	3.62	1897	727	NA	Reacts w/water	NA	Temp-specific	NA	NA
Beryllium	Solid	Gray metal, close-packed hexagonal structure	Metal	9.01	NA	NA	1.85 @ 20 deg C	2970	1287	NA	Slightly sol in hot water	NA	10 @ 1860 deg C	NA	NA
Cadmium	Solid	Soft, bluish-white solid	Metal	112.41	NA	NA	8.65	765	321	NA	Insoluble	NA	7.50E-03 @ 257 deg C	NA	NA
Cobalt	Solid	Silvery gray metal, hexagonal or cubic	Metal	58.93	NA	NA	8.92	2927	1495	NA	Insoluble	NA	7.50E-03 @ 1517 deg C	NA	NA
Copper	Solid	Reddish-colored metal	Metal	63.55	NA	NA	8.94	2595	1083	NA	Insoluble	NA	1 @ 1628 deg C	NA	NA
Iron	Solid	Soft, silvery white or gray	Metal	55.85	NA	NA	7.87	2861	1538	NA	Insoluble	NA	Temp-specific	NA	NA
Lead	Solid	Soft, bluish-white metal	Metal	207.2	NA	NA	11.3	1740	327.4	NA	Insoluble	NA	1.77 @ 1000 deg C	NA	NA
Manganese	Solid	Grey-white, resembling iron; metal	Metal	54.94	NA	NA	7.44	2095	1244	NA	Soluble	NA	Temp-specific	NA	NA
Mercury	Liquid	Silvery-white liquid metal	Metal	200.59	NA	NA	13.53	356.73	-38.87	1.554 @ 20 deg C	Insoluble	NA	2E-03 @ 25 deg C	NA	NA
Nickel	Solid	Hard, malleable, silvery-white metal	Metal	58.69	NA	NA	8.91	2730	1455	NA	Insoluble	NA	1 @ 1810 deg C	NA	NA
Selenium	Solid	Grey metal with metallic lustre	Metal	78.96	NA	NA	4.79	685	221	NA	Insoluble	NA	>1E-03 at 20 deg C	NA	NA
Silver	Solid	White metal, face-centered cubic structure	Metal	107.86	NA	NA	10.5	2212	960.5	NA	Insoluble	NA	4.56E+02 @ 961 deg C	NA	NA
Thallium	Solid	Bluish-white, very soft, inelastic, heavy metal	Metal	204.38	NA	NA	11.8	1473	304	NA	Insoluble	NA	1.41E-23 @ 25 deg C	NA	NA
Vanadium	Solid	Soft, bright white metal	Metal	50.94	NA	NA	5.96	3407	1910	NA	Insoluble	NA	2.34E-02 at 1916 deg C	NA	NA
Zinc	Solid	Bluish-white, lustrous brittle metal	Metal	65.38	NA	NA	7.13	907	419.5	NA	Insoluble	NA	Temp-specific	NA	NA

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PESTICIDES															
4,4'-DDD	Solid	Colorless or white crystals	Insecticide	320.04	NA	6.02	1.385	193	109 - 110	NA	1.60E-01 @ 24 deg C / 99% purity	6.60E-06	1.35E-06 @ 25 deg C	NA	NA
4,4'-DDE	Solid	White, crystalline solid	Pesticide	318.03	NA	6.51	NA	NA	89	NA	Temp-specific	4.16E-05	6.0E-06 @ 25 deg C	NA	NA
4,4'-DDT	Solid	Biaxial elongated tablets	Pesticide	354.49	NA	6.91	0.98 - 0.99	260	108.5	NA	5.50E-03 @ 25 deg C	8.30E-06	1.6E-07 @ 20 deg C	NA	NA
Aldrin	Solid	Colorless, brown or white needles or crystalline solid	Pesticide	364.91	NA	6.5	1.6 at 20 deg C	145 @ 2 mm Hg	104	NA	2.7E-02 @ 27 deg C	4.40E-05	1.20E-04 @ 25 deg C	NA	NA
alpha-Chlordane	Liquid	Viscous, amber-colored or colorless liquid	Pesticide	409.8	NA	6.16	1.59-1.63	175 @ 1 mm Hg	106-107	69 poises at 25 deg C	0.056 @ 25 deg C	4.86E-05	9.75E-06 mm Hg @ 25 deg C	NA	NA
beta-BHC	Solid	Crystals from benzene, alcohol, or xylene	Pesticide	290.83	NA	3.78	1.89 @ 19 deg C	60 @ 0.50 mm Hg	NA	NA	0.2 @ 20 deg C	NA	3.6E-07 @ 20 deg C	NA	NA
Endosulfan I	Solid	Brown crystals	Insecticide	406.93	NA	3.83	1.745 @ 20 deg C	106 @ 0.7 mm Hg	106	NA	0.53 @ 25 deg C	6.60E-05	6.2E-06 @ 20 deg C	NA	NA
Endosulfan II	Solid	Brown crystals	Insecticide	422.95	NA	3.66	NA	NA	181-182	NA	0.48 @ 20 deg C	NA	1.0E-11 @ 25 deg C	NA	NA
Endrin	Solid	Colorless to tan, crystalline solid	Pesticide	380.91	NA	5.2	1.7 @ 20 deg C	NA	Approx 200	NA	0.25 @ 25 deg C	6.36E-06	3E-06 @ 20 deg C	NA	NA
gamma-Chlordane	Liquid	Viscous, amber-colored or colorless liquid	Pesticide	409.8	NA	6.16	1.59-1.63	175 @ 1 mm Hg	104-105	69 poises at 25 deg C	0.056 @ 25 deg C	4.86E-05	9.75E-06 mm Hg @ 25 deg C	NA	NA
Heptachlor	Solid	White to light tan waxy solid or crystals	Pesticide	373.32	NA	6.1	1.57 @ 9 deg C	145 deg C @ 1.5 mm Hg	95-96	NA	1.8E-01 @ 25 deg C	2.94E-04	4.0E-04 @ 25 deg C	NA	NA
Heptachlor epoxide	Solid	White to light tan waxy solid or crystals	Pesticide	389.4	NA	5.4	NA	NA	160 - 161.5	NA	5.60E-02	3.20E-05	NA	NA	NA
SVOCs															
1,2-Benzphenanthrene (Chrysene)	Solid	Red or blue fluorescent rhombic plates from benzene, acetic acid	PAH	228.29	NA	5.73	1.274 @ 20 DEG C	448	258.2	NA	1.89E-03 @ 25 deg C	9.46E-05	6.23E-09 @ 25 deg C	NA	2.73E+06
2-Methylnaphthalene		Solid or crystalline	PAH	142.2	NA	3.86	0.99	241.1	37 - 38	NA	24.6 @ 25 deg C	5.18E-04	5.5E-02 @ 25 deg C	NA	NA
Benzo(a)anthracene	Solid	Colorless leaflets or plates	PAH	228.29	6.14	5.81	1.274	437.6	160	NA	9.4E-03 @ 25 deg C	4.30E-04	1.1E-07 @ 25 deg C	NA	NA

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Benzo(a)pyrene	Solid	Odorless yellow crystals or plates	PAH	252.32	5.94	6.02	1.351	310-312 @ 10 mm Hg	179 - 179.3	NA	1.60E-03 @ 25 deg C	4.57E-07	5.4E-09 @ 25 deg C	NA	NA
Benzo(b)fluoranthene	Solid	Colorless needles	PAH	252.32	5.74	6.57	NA	NA	168	NA	1.2E-03 @ 25 deg C	1.20E-09	5.0E-07 @ 20 deg C	NA	NA
Dibenzo(a,h)anthracene	Solid	Colorless plates or leaflets	PAH	278.33	6.22	6.28	1.282	524	266	NA	5.99E-04 @ 25 deg C	7.33E-09	1.0E-10 @ 20 deg C	NA	NA
Indeno(1,2,3-cd)pyrene	Solid	Yellow plates or needles showing a greenish-yellow fluorescence	PAH	276.34	7.49	6.8	NA	536	163.6	NA	6.20E-02 @ 20 deg C	3.48E-07	1.1E-10 @ 25 deg C	NA	NA
Naphthalene	Solid	White, crystalline flakes or solid	PAH	128.17	NA	3.3	1.162 @ 20 deg C	217.9 @ 760 mm Hg	80.2	0.96 cP @ 80.3 deg C	3.1E+01 @ 25 deg C	4.40E-04	8.5E-02 @ 25 deg C	NA	4.33E+04
Phenanthrene	Solid	Colorless plates, crystals, or leaflets	PAH	178.22	NA	4.57	9.800E-01 @ 4 DEG C	340	101	NA	Temp-specific		Temp-specific	NA	NA
Pyrene	Solid	Colorless tablets or pale yellow plates	PAH	202.26	NA	4.88	1.271 AT 23 DEG C	404 @ 760 mm Hg	151.2	NA	0.135 @ 25 deg C	1.10E-05	8.92E-05 @ 25 deg C	NA	3.80E+06
VOCs															
Acetone	Liquid	Colorless liquid	Volatile	58.08	NA	-0.24	0.7899 @ 20 deg C	56.0 @ 760 mm Hg	-94.8	3.2E-01 cP @ 20 deg C	1.00E+06	1.87E-05	2.31E+02 @ 25 deg C	NA	1.26E+04
2-Butanone (Methyl ethyl ketone)	Liquid	Colorless liquid	Volatile	72.11	NA	0.29	8.05E-01 @ 20 deg C	79.6	-86	0.41 mPa.s @ 20 deg C	3.53E+05 @ 10 deg C	4.70E-05	91 @ 25 deg C	NA	1.94E+04
Dichloromethane (Methylene chloride)	Liquid	Colorless liquid	Volatile	84.93	NA	1.25	1.3255 @ 20 deg C	39.75 @ 760 mm Hg	-95	0.43 mPa.s @ 20 deg C	13200 @ 25 deg C	3.25E-03	4.35E+02 @ 25 deg C	NA	2.49E+03