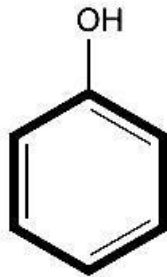




✓ PHENOL



Phenol, which is also referred to as carboic acid, Phenylic acid, benzophenol, hydroxybenzo and mono-hydroxy benzene, is used to produce a wide variety of chemical intermediates, including phenolic resins, bisphenol A, caprolactam, alkyl phenols, adipic acid, plasticizers, and others.

Phenol can be shipped in water solutions to eliminate molten storage. Health and safety information is available through the appropriate Material Safety Data Sheet(MSDS).

— Specification 1 : Phenol for phenolic resin production \* Purity = 100 - (Total GC impurities + Water)

Characteristics	Sales Specifications
Molten Color, Pt/Co	20 max,
Water, wt, %	0,1 max,
Solidification Point, °C	40,7 min,
Water solubility @25 °C	clear
Purity *, wt, %	99,7 min,

— Specification 2 : High purity phenol for PC grade Bisphenol A production

Characteristics	Sales Specifications
Molten Color, Pt/Co	10 max
Water, wt, %	0,03 max,
Total GC impurity, wt, ppm	50 max,
Iron content, wt, ppm	0,1 max,

— TYPICAL PROPERTIES

Molecular weight	94,11
Color	Colorless to light pink solid or white molten liquid
Appearance	White crystalline (at room temperature)
Deliquescent	Yes
Dielectric constant, @ 48°C	9,9
Light sensitive	Yes, darkens slowly on exposure to light
Odor	Characteristically sweet
Odor threshold	0,05 ~ 0,5 ppm
Physical state	Liquid or solid
Reactivity	Stable



Density	25 °C	1,071 kg/ℓ
	50 °C	1,050 kg/ℓ
Specific Gravity @ 25/25 °C	1% aqueous solution	1,0009
	2% aqueous solution	1,0025
	5% aqueous solution	1,0044
Specific gravity	Solid at 25/4 °C	1,071
	Liquid at 41/4 °C	1,058
	Liquid at 50/4 °C	1,049
	Liquid at 60/4 °C	1,041
Autoignition temperature		715 °C (1319 °F)
Boiling point, @ 760 mmHg		181,8 °C (359 °F)
Coefficient of expansion		0,00085 per °C (approximate)
Explosive limit in air, lower		1,5% v/v
Flash point	Tag open cup	85 °C (185 °F)
	Closed cup	79 °C (174 °F)
Freezing point		40,8 °C (105 °F)
Heat of Combustion	(cal/g)	-7,754
	(Btu/lb)	-13,957
Heat of Fusion	(cal/g)	29,22
	(Btu/lb)	52,6
Heat of Vaporization at b.p.	(cal/g)	116,6
	(Btu/lb)	210
Specific heat, (cal/g °C)	Solid at 4 °C	0,306
	Solid at 22,7 °C	0,338
	Liquid at 70~74 °C	0,548
Critical pressure, atm		60,5
Critical temperature		419 °C (786 °F)
Solubility	Water 16 °C (61 °F)	6,7 g/100 ml
	66 °C (151 °F)	all
	Alcohol	all
Solubility, water in phenol @ 20 °C		28 wt, %
Surface tension	at melting point (Dynes/cm)	37,9
	Threshold limit value, 8 hours	5 ppm or 19 mg/m <sup>3</sup>
Vapor density, (Air=1)		3,24
Vapor pressure, (mbar)	25 °C	0,29
	50 °C	3,5
	100 °C	54
	160 °C	530
Viscosity, (centistokes)	45 °C	3,8
	60 °C	2,47
	80 °C	1,56
	100 °C	1,09