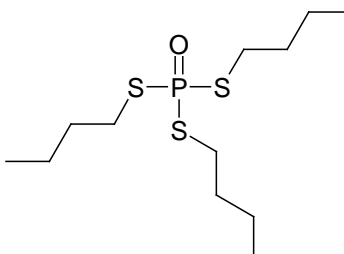


## CHAPTER 4. CHEMICAL AND PHYSICAL INFORMATION

### 4.1 CHEMICAL IDENTITY

Table 4-1 lists common synonyms, trade names, and other pertinent identification information for tribufos.

**Table 4-1. Chemical Identity of Tribufos**

Characteristic	Information	Reference
Chemical name	S,S,S-Tributyl phosphorotrithioate	EPA 2006b
Synonym(s) and registered trade name(s)	Butifos; butiphos; butyl phosphorotrithioate; merphos oxide; tribufos; tribuphos; DEF; DEF 6; Folex	CalEPA 2004; EPA 2006b
Chemical formula	C <sub>12</sub> H <sub>27</sub> OPS <sub>3</sub>	EPA 2006b
Chemical structure		EPA 2006b
CAS Registry Number	78-48-8	EPA 2006b

CAS = Chemical Abstracts Service

### 4.2 PHYSICAL AND CHEMICAL PROPERTIES

Tribufos is a colorless to pale yellow liquid with a strong mercaptan-like odor that arises from butyl disulfide and butyl mercaptan that are formulation impurities and degradation products of tribufos (NRA 1998). Table 4-2 lists important physical and chemical properties of tribufos.

**Table 4-2. Physical and Chemical Properties of Tribufos**

Property	Information	Reference
Molecular weight	314.54	Tomlin 2003
Color	Colorless to pale yellow	Tomlin 2003
Physical state	Liquid	Tomlin 2003
Melting point	<-25°C	Tomlin 2003

## 4. CHEMICAL AND PHYSICAL INFORMATION

**Table 4-2. Physical and Chemical Properties of Tribufos**

Boiling point	210°C at 750 mm Hg	Tomlin 2003
Density at 20°C	1.057 at 20°C	Tomlin 2003
Odor	Mercaptan-like odor	Tomlin 2003
Odor threshold:		
Water	No data	
Air	No data	
Solubility:		
Water at 20°C	2.3 mg/L at 20°C	Tomlin 2003
Organic solvents	Soluble in aliphatic, aromatic, and chlorinated hydrocarbons and alcohols; completely miscible in dichloromethane, n-hexane, 2-propanol, and toluene	Tomlin 2003
Partition coefficients:		
Log K <sub>ow</sub>	5.7	Tomlin 2003
Log K <sub>oc</sub>	3.7–4.10	EPA 1987
Vapor pressure at 25°C	5.3x10 <sup>-6</sup> mm Hg	Tomlin 2003
Henry's law constant at 25°C	2.94x10 <sup>-7</sup> atm·m <sup>3</sup> /mole	Fendinger and Glotfelty 1990
Autoignition temperature	No data	
Flashpoint	No data	
Flammability limits	No data	
Conversion factors	1 µg/m <sup>3</sup> = 0.078 ppbv 1 ppbv = 12.82 µg/m <sup>3</sup>	Calculated using the ideal gas law and assuming temperature of 25°C and 1 atm
Explosive limits	No data	