

2??-????????

???Zn?Cu??—????????????

2.1 ??-????

????/??
??
????????????????????????[2]?

2.2 ??-????????????

??
????????????????1???

3??-????????

3.1 ????

????????????????????????????????????pH??2??Tl??77.6mg/L????????????????w?Tl??99%?

3.2 ?????

????????????????100mg/L????1+1??20% ?????????????30% ?????????????????

????????????pHB-3????BT124S????????TAS-990????????DHG-9053A??
????SK2200H????????81-2?

3.3 ??-????????

??
????????????????????????????????????1mg/L?

1????

????1mg/L????????????40????????????10mL????????????
????????????97.2%~104%????????????94.4%~106%?

2????????????

?4????????200mL????????????????????????????????????95.9%~104%????????????????
????????????????????????????26.8%~31.7%?????68.3%~73.2%?

3.4 ??-????????????????

????????20~500mL????????????5.00mg/L????????????????????????????????30min????
1h??

3.4.1 ?????pH?????

????????????????pH????????????2????????????pH????????Tl????????????pH?6~9????
Tl????????????pH?9~11????Tl????????95%????????????????-????????????pH????????9?

3.4.2 ?????????????????

?25??
??Fe??
??

???100mL????20~100mL????????0.1~1.0g????????????????????????????????????
3????????????????+??94.5%?98.5%????????+
1.0g????????+0.1g????????????????????????????????95.2%?98.9%????????????2
0mL+???0.1g????????????

3.4.3 ?????????????

????????????????????10min????????????????????????94.2%?98.5%????????????
????????????????30min?

4????????????

????????????????—????????????????pH??10?H2O2????????1?10????????1.0g/L????
????????30min????????????????????99%???

5???

??
??—??pH??10????????????????1?10????????1.0g/L????????
??30min????????????????????????99%????????????????????