

CONTENTS

1.	INTRODUCTION	1-104
	(a) General	
	(b) Corrosion and its economic aspects	
	(c) Definition and forms of corrosion	
	(d) Corrosion in industry	
	(e) Principle of open recirculating cooling water system	
	(f) Cooling waters	
	(g) Associated problems	
	(i) Corrosion	
	(ii) Scaling and fouling	
	(iii) Microbiological growth	
	(h) System of control : Inhibition	
	(A) Inhibition Mechanism	
	(B) Inhibitors	
	(I) Corrosion	
	(II) Scaling	
	(III) Fouling	
	(IV) Microbiological growth	
	(i) Monitoring of corrosion	
	(j) Case histories - Typical failures due to cooling waters	
2.	OBJECT	105-109

(a) General

(b) Preparation of specimen

(c) 'Waters' for study

c-I Cooling water Ammonia Plant

c-II Cooling Water Caprolactam Plant

c-III Cooling Water Urea Plant

c-IV Cooling Water Ammonium Sulphate Plant

c-V Make-up Water

(d) 'Inhibitors' for study

d-I Benzotriazole

d-II Corobit EPA-529

d-III Aquacid-105 (H.E.D.P.)

d-IV Diammonium hydrogen orthophosphate

d-V Aquacid-105 (H.E.D.P.) +
Diammonium-hydrogen orthophosphate

(e) Procedure

(f) Observations

f-I Benzotriazole

f-II Corobit EPA-529

f-III Aquacid-105 (H.E.D.P.)

f-IV Diammonium hydrogen ortho phosphate

f-V Aquacid-105 (H.E.D.P.) + Diammonium-hydrogen ortho phosphate

- (g) Effect of surface treatment
- (h) Anodic polarisation
- (i) Non heat transfer loop method

4. RESULTS AND DISCUSSIONS 186 - 331

(I) Inhibitors

- (i) Benzotriazole
 - (ii) Corobit EPA-529
 - (iii) Aquacid-105 (H.E.D.P.)
 - (iv) Diammonium hydrogen orthophosphate
 - (v) Aquacid-105 (H.E.D.P.)+Diammonium-hydrogen orthophosphate
- (II) Effect of surface treatment
- (III) Anodic polarisation
- (IV) Non Heat Transfer loop

5. SUMMARY 332 - 353

REFERENCES 354 - 364