

SAFETY, HEALTH, AND ENVIRONMENTAL (Concluded)

B. Personnel Air Monitoring for C-8

MG McClusky/WA Ott

C-8 in air personnel monitoring was last conducted in 1988 when Polymers and Copolymers areas were both using powdered C-8 exclusively. Liquid C-8 replaced powdered C-8 in August, 1989. Personnel monitoring was restarted in January, 1991 to compare the effects of liquid C-8. Monitoring was completed in Polymers in April and was started in Copolymers in June.

A contract employee was hired to observe the job assignment being monitored. For Polymers, seven jobs were covered, including the Warehouse & Materials Handler (created with use of liquid C-8) and the C-8 Recovery job.

The AEL is 0.56 MPB (moles per billion). The limitation of the test is 0.03 MPB. Results are tabulated below:

<u>PERSONNEL SAMPLES</u>	<u>C-8 LEVELS</u>
33	< 0.03 MPB
10	0.03-0.10
6	0.10-0.22

NOTE: The maximum level measured was 0.215. All of the results for the Warehouse & Materials Handler, C-8 Recovery, and Dispersion Packout were below the 0.03 MPB level.

The above results compare favorably to the use of powdered C-8. The job assignment with the most noticeable decrease was the Autoclave operator, followed by the Granular polykettle. These are the two assignments that would expect to benefit the most from liquid C-8.

AUTOCCLAVE OPERATOR

<u>YEAR</u>	<u>AVERAGE LEVEL</u>	<u>MAX RESULT</u>
1988	0.138	0.300
1991	0.070	0.207

GRANULAR POLYKETTLE

<u>YEAR</u>	<u>AVERAGE LEVEL</u>	<u>MAX RESULT</u>
1988	0.056	0.149
1991	0.050	0.097

The Copolymers personnel air sampling should be completed by the end of the third quarter, 1991.

RJZ004630

SAFETY, HEALTH, & ENVIRONMENTAL

TITLE: C-8 IN AIR PERSONNEL SAMPLING FOR COPOLYMERS

ABSTRACT: PERSONNEL SAMPLING FOR COPOLYMERS WAS COMPLETED IN JULY. THE PURPOSE WAS TO EVALUATE TODAY'S USE OF LIQUID C-8 VERSUS OBSOLETE POWDER C-8. ALL RESULTS WERE WELL BELOW THE AEL.
(MCCLUSKY, OTT, BALL)

DISCUSSION: LIQUID C-8 USE REPLACED POWDER C-8 IN SEPTEMBER 1989. THE PURPOSE FOR THE CHANGE WAS TO ELIMINATE EMPLOYEE EXPOSURE TO C-8 DUST IN PROCESS MAKEUP. THE COPOLYMERS BTO WAS MEASURED IN JULY TO DETERMINE THE EXTENT OF C-8 IN AIR EXPOSURE TO PERSONNEL.

SOME THIRTY-TWO SAMPLES WERE TAKEN IN FIVE FEP ASSIGNMENTS: 1)POLYKETTLE, 2)EXTRUDER, 3)OVEN, 4)WET FINISHING, AND 5)PACKOUT. THE RESULTS ARE SUMMARIZED AS FOLLOWS:

0.56 MOLES PER BILLION (MPB) IS THE AEL

0.03 MPB IS THE LOWER TEST LIMIT

<u>SAMPLES</u>	<u>RESULTS</u>
19	< 0.03
11	0.03-0.10
2	0.10-0.20

32	

THESE RESULTS ARE WELL BELOW THE AEL. SIXTY PERCENT OF THE RESULTS ARE BELOW THE MINIMUM DETECTABLE LEVEL. THESE RESULTS ARE ALSO AN IMPROVEMENT OVER THE LAST SAMPLING CONDUCTED WITH POWDER C-8, IN 1988.

THE TEFLON® POLYMERS' BTO WAS SAMPLED FOR C-8 IN AIR EXPOSURE WITH RESULTS REPORTED IN MY IIQ 91 QUARTERLY. WILLIAM ANDERSON, WILMINGTON S.H.E., HAS ALL POLYMERS AND COPOLYMERS RESULTS. HE HAS RESPONSIBILITY FOR DETERMINING IF ANY ADDITIONAL SAMPLING IS REQUIRED.

MG McCuskey
III Quarterly
1991

RJZ004631

C-8 Sampling
PERSONNEL IN AIR

Polymers 199

<u>C-8 Recovery</u>	<u>w/m Handler</u>	<u>Autoclaves</u>
<0.03	<0.03	<0.03
<0.03	<0.03	<0.03
<0.03	<0.03	<0.03
<0.03	<0.03	0.043
<0.03	<0.03	0.101 (A)
<0.03	<0.03	0.042 (A)
<0.03	<0.03	0.207 (A)
<0.03	<0.03	0.107
		0.043 (A) CLEANED OPEN CLAVE
<u>Polykettles</u>	(ENVIRONMENTAL) <u>Sump/Dryers</u>	<u>Dispersion</u>
<0.03	S - <0.03	<0.03
0.097	<0.03	<0.03
<0.03	0.052	0.215
0.03	<0.03	<0.03
0.052		
0.051	D - 0.105	DPO - <0.03
0.076	<0.03	<0.03
<0.03	0.047	<0.03
	0.140	<0.03

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C-8 IN AIR PERSONNEL TESTING

- * PURPOSE WAS TO COMPARE LIQUID C-8 USE TO POWDER C-8
- * 49 SAMPLES IN POLYMERS AREA
- * AEL = 0.56 MOLES PER BILLION
0.03 LOWER LIMIT OF TEST
- * HIGHEST RESULT WAS 0.215.
- * 33 SAMPLES WERE <0.03.
- * ALL SAMPLES FOR C-8 RECOVERY JOB WERE <0.03.
WAREHOUSE/MATERIAL
DISPERSION PACKOUT
- * HOW DID WE COMPARE TO POWDER C-8 USE?

1988	AUTOCLAVES	0.138 (7)	0.300 MAX
1991	AUTOCLAVES	0.070 (9)	0.207
1988	POLYKETTLES	0.056 (7)	0.149
1991	POLYKETTLES	0.030 (8)	0.097

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AUTOCLAVE ASSIGNMENT

	<u>SAMPLE</u>	<u>COMMENTS</u>	<u>TIME IN A/C CELL (MINS)</u>
1)	< 0.03		0
2)	< 0.03		90 (#6)
3)	< 0.03		0
4)	0.043		50 (#6)
5)	0.101	CLEANED CLAVE	300 (#8)
6)	0.042	CLEANED CLAVE	250 (#7)
7)	0.207	CLEANED CLAVE	200 (#6)
8)	0.107		25 (#8)
9)	0.043		5 (#6)

20 AUTOCLAVE

0.663	CLAVE RUNNING	4/24/91
0.616	CLAVE IDLE	5/ 2/91
0.610	CLAVE CLEANED	5/ 3/91

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AUTOClave CELL SAMPLING

<u>DATE</u>	<u>CELL INTAKE SUPPLY</u>	<u>#8 CLAVE CELL</u>
6/3/91	< 0.03	0.752
6/4/91	< 0.03	0.474
6/5/91	< 0.03	0.397
6/6/91	< 0.03	0.450
6/7/91	< 0.03	0.186

<u>#8 CLAVE CELL</u>	<u>#2 DRYER</u>	<u>#3 DRYER</u>
0.752	DOWN 8 HRS	DOWN 8 HRS
0.474	DOWN 8	RAN 8 (SCR 8)
0.397	DOWN 8	RAN 5 (SCR 5)
0.450	RAN 3 (SCR 3)	RAN 7 (SCR 7)
0.186	RAN 2 (SCR 2)	DOWN 8

ADDITIONAL CELL SAMPLING

<u>DATE</u>	<u>HOLE IN INTAKE SUPPLY DUCT</u>	<u>#6 CELL</u>	<u>#7 CELL</u>	<u>#2 DRYER</u>	<u>#3 DRYER</u>
7/2/91	----	1.961	0.881	DOWN 8	DOWN 8
7/3/91	1.536	1.141	0.819	RAN 8 (SCR 8)	RAN 7 (SCR 7)

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