

esLife Service Life Estimation Program

Name:

EIN:

Department:

Occupational Category:

Exposure Group:

Task Description:

Estimated Cartridge Service Life:

Cartridge	Description	Minutes	Hours	8-Hr. Shifts
75SC	75SCP100	368.14	6.136	0.767
N7500-1	7581P100	455.30	7.588	0.949
N7500-3	7583P100	376.08	6.268	0.783

Input Parameters for Exposure Conditions:

Contaminant [CAS #]: METHYL (n-AMYL) KETONE [110-43-0]

8-hr TWA: 100 ppm

STEL: ppm

Ceiling: ppm

IDLH: 800 ppm

User Specified OEL: ppm

Worksite Concentration: 61 ppm

Contaminant [CAS #]: n-BUTYL ALCOHOL [71-36-3]

8-hr TWA: 100 ppm

STEL: ppm

Ceiling: ppm

IDLH: 1400 ppm

User Specified OEL: ppm

Worksite Concentration: 210 ppm

Breathing Rate: Moderate - maximum pace for continuous working (50 lpm)

Temperature: 70 °F

Humidity: 65% - 80%

Breakthrough: Results calculated at 10% breakthrough

Safety Factor: No change to final results

Disclaimer of Warranty

The algorithm and database included in this program incorporate the best information currently

Cartridge Service Life Estimation Report

available to North Safety Products, and are derived from published sources generally believed to be reliable. North makes no warranty or representation as to the accuracy, completeness or reliability of either the source material or the information resulting from the use of this program, and disclaims the implied warranties of merchantability and fitness for particular purpose, and all other warranties, express or implied.

The user assumes all risks, if any, arising out of the use of this program, and North assumes no liability for any direct, indirect, incidental or consequential damages arising out of the use or inability to use the program.

North reserves the right to change design, construction or formulation of its chemical cartridges or any of their components without notice to cartridge users of the effect of any such changes on service life or any cartridge change schedule derived from the use of this program.

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Attn: Jerry Davis of IMIA

Regarding: Change out rates for respirator cartridges filtering Benzyl Alcohol and Trimethylbenzene

BP: Benzyl Alcohol = 203 degrees C
PPM from monitoring = 13 ppm
BP: Trimethylbenzene = 176 degrees C
PPM from monitoring = 17ppm

Experimental work can allow for a generalization or "rule of thumb" that broadly defines the service life of cartridges exposed to chemicals. One such Rule of Thumb for estimating organic vapor cartridge service life is found in chapter 36 of the AIHA publication "The Occupational Environment - Its Evaluation and Control."

It suggests that:

- If the chemical's boiling point is $> 70\text{ }^{\circ}\text{C}$ and the concentration is less than 200 ppm you can expect a service life of 8 hours at a normal work rate.
- Service life is inversely proportional to work rate.
- Reducing concentration by a factor of 10 will increase service life by a factor of 5.
- Humidity above 85% will reduce service life by 50%

Jerry given the very high boiling points for these chemicals using the AIHA rule you can expect a change out rate of 8 hours. If your humidity level is above 85% then you will have to drop back to 4 hours.

Thanks,
Dave Barbee
International Paint HSE
713-684-1307



November 14, 2006

Luis Medina
IMIA
2798 Harbor Drive
San Diego, CA 92113-

Clayton Work Order No. 06110258

Reference:

Dear Luis Medina:

Clayton Group Services received 6 samples on 11/6/2006 for the analyses presented in the following report.

This is a preliminary report. Caution should be exercised in the use of any data presented.

This material is confidential and is intended solely for the person to whom it is addressed. If this is received in error, please contact the number provided below.

If you have any questions regarding these tests results, please feel free to contact a Client Services Representative at (800) 806-5887.

Sincerely,

Laura McMahon
Supervisor, Client Services

cc:

CASE NARRATIVE

Date: 14-Nov-06

Client: IMIA

Project:

Work Order No 06110258

Unless otherwise noted below, all quality control results associated with this sample set were within acceptable limits and/or do not adversely affect the reported results.

Unless otherwise indicated below, the industrial hygiene results have not been blank corrected.

ANALYTICAL RESULTS

Date: 14-Nov-06

Client: IMIA

Project:

Work Order No: 06110238

Sample Identification: DL4658

Date Sampled: 11/1/2006

Sample Type: 3M 3520 PM

Date Received: 11/6/2006

Lab Number: 001A

Sampling Time (min): 300

Analyst: SMF

Analyte	Sampling Rate (cc/min)	Analytical Results			Reporting Limit (µg)	Date Analyzed	Method Reference
		(µg)	(mg/m³)	(ppm)			
Methyl Amyl Ketone	27.9	1,200	150	31	3	11/10/2006	OSHA 7
n-Butanol	34.3	3,300	320	100	5	11/10/2006	OSHA 7
Trimethylbenzenes, Total	26.3	650	82	17	9	11/10/2006	OSHA 7

Sample Identification: DL4646

Date Sampled: 11/1/2006

Sample Type: 3M 3520 PM

Date Received: 11/6/2006

Lab Number: 002A

Sampling Time (min): 300

Analyst: SMF

Analyte	Sampling Rate (cc/min)	Analytical Results			Reporting Limit (µg)	Date Analyzed	Method Reference
		(µg)	(mg/m³)	(ppm)			
Methyl Amyl Ketone	27.9	890	110	23	3	11/10/2006	OSHA 7
n-Butanol	34.3	2,300	220	73	5	11/10/2006	OSHA 7
Trimethylbenzenes, Total	26.3	490	62	13	9	11/10/2006	OSHA 7

Sample Identification: DL4656

Date Sampled: 11/1/2006

Sample Type: 3M 3520 PM

Date Received: 11/6/2006

Lab Number: 003A

Sampling Time (min): 300

Analyst: SMF

Analyte	Sampling Rate (cc/min)	Analytical Results			Reporting Limit (µg)	Date Analyzed	Method Reference
		(µg)	(mg/m³)	(ppm)			
Methyl Amyl Ketone	27.9	2,400	290	61	3	11/10/2006	OSHA 7
n-Butanol	34.3	6,500	630	210	5	11/10/2006	OSHA 7
Trimethylbenzenes, Total	26.3	1,300	160	33	9	11/10/2006	OSHA 7

Date: 14-Nov-06

ANALYTICAL RESULTS

Client: IMIA

Project:

Work Order No: 06110258

Sample Identification: DL4875

Date Sampled: 10/29/2006

Sample Type: 3M 3520 PM

Date Received: 11/6/2006

Lab Number: 004A

Sampling Time (min): 300

Analyst: SMF

Analyte	Sampling Rate (cc/min)	Analytical Results			Reporting Limit (µg)	Date Analyzed	Method Reference
		(µg)	(mg/m³)	(ppm)			
Benzyl Alcohol	27.1	560	69	16	6	11/10/2006	OSHA 7
Methyl Amyl Ketone	27.9	900	110	23	3	11/10/2006	OSHA 7

Sample Identification: DL4826

Date Sampled: 10/29/2006

Sample Type: 3M 3520 PM

Date Received: 11/6/2006

Lab Number: 005A

Sampling Time (min): 300

Analyst: SMF

Analyte	Sampling Rate (cc/min)	Analytical Results			Reporting Limit (µg)	Date Analyzed	Method Reference
		(µg)	(mg/m³)	(ppm)			
Benzyl Alcohol	27.1	460	56	13	6	11/10/2006	OSHA 7
Methyl Amyl Ketone	27.9	810	96	21	3	11/10/2006	OSHA 7

Sample Identification: DL4667

Date Sampled: 10/29/2006

Sample Type: 3M 3520 PM

Date Received: 11/6/2006

Lab Number: 006A

Sampling Time (min): 300

Analyst: SMF

Analyte	Sampling Rate (cc/min)	Analytical Results			Reporting Limit (µg)	Date Analyzed	Method Reference
		(µg)	(mg/m³)	(ppm)			
Benzyl Alcohol	27.1	470	57	13	6	11/10/2006	OSHA 7
Methyl Amyl Ketone	27.9	840	100	22	3	11/10/2006	OSHA 7

General Notes:

<: Less than the indicated reporting limit (RL).

--: Information not available or not applicable.

Back sections (if applicable) were checked and showed no significant breakthrough unless otherwise noted.