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Technical Bulletin

July 2024

3M™ Organic Vapor Cartridge Changeout Worksheet

Instructions

Your Air Monitoring Report May Look Like This:

User Identification	Monitor Code	Sampling Date	Sampling Time	Weight	Concentration	
		Compound(s)		Micrograms	mg/m3	PPM
Monitor 1	MC9261	11/2/16	615 min.			
		Ethyl Benzene		178	10.2	2.36
		Methyl Ethyl Ketone		<3.00	<0.146	<0.0494
		Toluene		2250	114	30.2
Moniitor 2	MC9495	11/2/16	370 min.			
		Acetone		272	21.8	9.18
		Cyclohexanone		<2.99	<0.311	<0.0774
		n-Butyl Acetate		332	27.6	5.82

To determine your changeout schedule, follow steps 1 through 4 below.

1. Enter your exposure concentration (ppm) from the air monitoring report. If you have additional compounds that are not listed, please see www.osha.gov/annotated-pels, or call 1-800-243-4630.
2. Divide Concentration by occupational exposure limit (OEL*), enter result in C/OEL box
3. Add all C/OEL results for total. If total is less than 1, you may or may not need an organic vapor respirator depending on variability of exposure levels or possibility of other organic vapors not included in your exposure monitoring report. Please consult an industrial hygienist, other safety professional or 3M at 1-800-243-4630 for more information.
4. Determine cartridge changeout schedule, see next page.

WORKSHEET FOR COMPARISON OF SOLVENT VAPOR CONCENTRATIONS TO OCCUPATIONAL EXPOSURE LIMITS (OEL)

Compound(s)	Concentration ppm ❶	÷ ❷	OEL* ppm	=	C/OEL
Acetone		÷	250	=	
n-Butyl acetate		÷	50	=	
n-Butyl alcohol		÷	20	=	
Ethyl acetate		÷	400	=	
Ethyl benzene		÷	20	=	
Isobutyl acetate		÷	50	=	
Methyl n-amyl ketone		÷	50	=	
Methyl ethyl ketone (MEK)		÷	200	=	
Methyl isobutyl ketone (MIBK)		÷	20	=	
n-propanol		÷	100	=	
Styrene		÷	20	=	
Toluene		÷	20	=	
Trimethyl benzene		÷	25	=	
Xylene		÷	100	=	
				TOTAL	❸

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3M Suggested Cartridge Changeout Schedule Based on Monitoring Results

Regardless of exposure concentrations, if employees are required to wear an organic vapor respirator by their employer, then a cartridge change schedule must be implemented per the OSHA standard for respiratory protection (29 CFR 1910.134).

If total is **less than 1**, cartridges should be changed at a frequency that is easy to remember (e.g. 1 day, 1 week, 2 weeks, etc.)

If total is **greater than 1**, calculate change schedule using 3M Service Life Software (3M.com/sls). Contact your 3M Representative for assistance or call 1-800-243-4630.

Cartridges must also be changed if physically damaged; or if odor, taste or irritation from contaminants is detected inside the respirator. For more information, please see 3M Technical Data Bulletin Cartridge Change Schedules for Low Exposure Environments.

⚠ **WARNING**

Failure to follow all product *User Instructions* or to establish a proper cartridge change schedule **may result in sickness or death.**

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3M PSD products are occupational use only.

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