

Для компании ЗМ:

<http://csr.v.3m.com/csr/v/>



Occupational Health & Environmental Safety Division Cartridge Service Life

Guest Log-in

Version: Select: USA/American
Log in as a Guest

Предупреждение об ограничениях применимости данной программы:



Occupational Health & Environmental Safety Division Cartridge Service Life

Service Life Warning

Welcome to 3M Service Life Software Version: 4.0

This program is designed to provide a service life estimate only for the contaminants listed and under the conditions specified by the user. There are several limitations on the service life estimate. You must read before using the 3M Service Life Software!



- Failure to input proper information or misuse of the data may cause improper respirator use resulting in sickness or death.
- For organic vapor chemicals, this program gives valid estimates only for air with less than 65% relative humidity unless appropriate correction factors are used.
- This estimate is only valid for the 3M respirator selected. If you use more than one type of 3M cartridge, you must run an estimate for those cartridges also. Do not use for 3M cartridges not listed.
- Do not use for other respirator manufacturers' chemical cartridges.
- Due to the number of workplace variables, use these estimates with caution.
- Selecting [Help] provides further information for each screen.

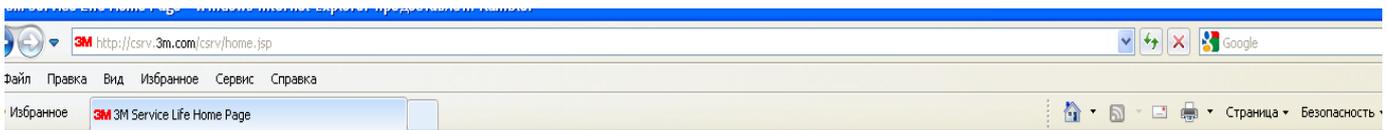
If you have questions about the use or limitations of this software, contact 3M

For technical support, call OH&ESD Technical Service 1-800-243-4630 or [Contact Us](#)

I understand and accept the above stated warning.

Accept

Краткое описание программы:



Occupational Health & Environmental Safety Division Cartridge Service Life

Current Selection

1. Contaminants
2. Exposures
3. Cartridges
4. Environment
5. Solution

[Help](#)
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Want more individualized help? Check out our new [3M Health and Safety Services](#)

3M Service Life Home Page

Welcome to 3M Service Life Software (Version: 4.0)

This program provides an estimate of service life for chemical cartridge respirators. It is not a respirator selection tool. This software should only be used after it has been determined that a res; the listed cartridges is appropriate for your exposure situation. The respirator must not be used in:

- exposures exceeding the respirator maximum use exposure (MUC) [MUC = Assigned protection factor X Occupational exposure limit (e.g., PEL or TLV)],
- exposures exceeding the IDLH level for the contaminant, or
- in oxygen exposures less than 19.5%.

[Begin Service Life](#) takes you to the Contaminants Page to begin the service life calculation process.

Once on the Contaminants Page, you navigate through 3M Service Life by clicking on the 'Next Step' or 'Previous Step' buttons at the bottom of the pages.

Items on the menu at the left of the page allow you do the following:

- **Contaminants:** takes you to the Contaminants Page to begin an estimate of service life session.
- **Help:** provides access to context-sensitive help.
- **Home Page:** brings you back to this Home Page.
- **About Service Life:** provides general information about Service Life Software.

The general process followed to make an estimate of service life for a chemical cartridge respirator is as follows: enter one or more contaminants, enter the exposures for the contaminants, se enter environment information, view the Solution.

[Begin Service Life](#)

Выбрали газы, загрязняющие воздух рабочей зоны – анилин и бензол:

3M Occupational Health & Environmental Safety Division
Cartridge Service Life

Current Selection
1. Contaminants
2. Exposures
3. Cartridges
4. Environment
5. Solution

Contaminant
Contaminant: Standard User
Sort: Contaminant CAS#

Search [Advanced Search](#)

Contaminants
Aantisal 1a (108-88-3)
Acetaldehyde (75-07-0)
Acetic acid (64-19-7)
Acetic acid anhydride (108-24-7)
Acetic acid benzyl ester (140-11-4)
Acetic acid butyl ester (123-86-4)
Acetic acid methyl ester (79-20-9)
Acetic acid n-propyl ester (109-60-4)

Add Contaminant Remove Contaminant

Aniline (62-53-3)
Benzene (71-43-2)
-----End of Listing-----

[Next Step ->](#)

С помощью кнопки “Contaminant info” в правой части экрана получили сведения об анилине:

3M Occupational Health & Environmental Safety Division
Cartridge Service Life

Contaminant Information

| | |
|---------------------|---|
| Contaminant Name: | Aniline |
| CAS# | 62-53-3 |
| IDLH | 100.00000 |
| Exposure Limit Type | TLV |
| Exposure Limit | 2.00000 |
| Unit of Measurement | ppm |
| Odor Threshold | 0.676 ppm |
| Molecular Weight | 93.12 |
| Melting Point | -6.0 |
| Boiling Point | 184.1 |
| Main Hazard | Hematologic Disturbances--Methemoglobinemia |
| Eye Irritation | No |

Synonyms
Aminobenzene
Aniline
Aniline oil
Phenylamine

Учтите, что ПДКрз в США и РФ могут заметно отличаться.

Закрыли окно информации о вредном газе.

Следующий шаг – ввод средней концентрации в воздухе рабочей зоны (можно и в мг/м):

3M Occupational Health & Environmental Safety Division
Cartridge Service Life

Current Selection
1. Contaminants
2. Exposures
3. Cartridges
4. Environment
5. Solution

Contaminant Exposure

| Contaminant | Exposure | Units |
|-------------------------|----------|-------|
| Benzene | 10.00000 | ppm |
| Aniline | 50.00000 | ppm |

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Выбираем фильтр для защиты от органических соединений:

3M Occupational Health & Environmental Safety Division
Cartridge Service Life

Current Selection
1. Contaminants
2. Exposures
3. Cartridges
4. Environment
5. Solution

Cartridge Selection

Select a cartridge:

- [07046] 6000 Series Organic Vapor Cartridge
- [07047] 6000 Series Organic Vapor/Acid Gas Cartridge
- [07191] 5000 Series Paint Spray Packout(OV/P95 Small)
- [07192] 5000 Series Paint Spray Packout(OV/P95 Medium)
- [07193] 5000 Series Paint Spray Packout(OV/P95 Large)
- [5101] Organic Vapor Respirator (Small)
- [5103] Organic Vapor/Acid Gas Respirator (Small)
- [5106] Multi Gas & Vapor Respirator (Small)
- [5201] Organic Vapor Respirator (Medium)
- [5203] Organic Vapor/Acid Gas Respirator (Medium)

Add cartridge

Selected cartridge:
[07046] 6000 Series Organic Vapor Cartridge

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Want more individualized help?
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[3M Health and Safety Services](#)

<- Previous Step Next Step ->

Выбираем условия работы:

Коэффициент коррекции (для концентраций) 1,
Относительная влажность – ниже 65% (Relative Humidity),
Атмосферное давление – 1 стандартная атмосфера,
Температура – 30 градусов **Цельсия** (а не Фаренгейтера),
Интенсивность выполняемой работы – средняя
Концентрация проскока (до которой будет рассчитываться срок службы фильтра)= ½ ПДКрз

США

Environmental Safety Division
Life

Environment Information

| Contaminant | Exposure | Units | Correction Factor |
|-------------------------|----------|-------|-------------------|
| Benzene | 10.00000 | ppm | 1 |
| Aniline | 50.00000 | ppm | 1 |

Relative Humidity:

Atmospheric Pressure (ATM):

Note: Acceptable range of atmospheric pressure is 0.8 to 1.2 ATM.

Temperature: The valid temperature range for this mixture is 5.5 - 50.0C or 41.9 - 122.0F.
Note: Select the temperature that is closest to your operating temperature.

Work Rate:
 Light Work
 Medium Work
 Heavy Work

Breakthrough Level:
 Occupational Exposure Limit (TLV, PEL or WEEL)
 1/2 Occupational Exposure Limit (TLV, PEL or WEEL)

Получаем результат вычислений:

The screenshot shows a software window titled "Service Life Solution". The interface includes a menu bar at the top with options like "Страница", "Безопасность", and "Сервис". The main content area is divided into several sections:

- User Information:** Name: American Guest Account
- Solution:** Estimated Service Life = 78 Hours (highlighted in yellow)
- Notice!** The service life estimate for the organic mixture you have selected was based on the method described by OSHA in CPL2-0.120 Inspection Procedures for the Respiratory Protection Standard, 9/18/98 pp. 13-14. Service life calculation based on Aniline at an Exposure = 60.0 ppm
- Contaminants and Exposures:**
 - Benzene:** CAS#: 71-43-2, Exposure: 10.00000 ppm, Correction Factor: 1, Exposure Limit: 0.50000 ppm, IDLH: 3000.00000. A red warning states: "WARNING: The US OSHA standard for benzene 29 CFR 1910.1028 requires that organic vapor cartridges be replaced at expiration of its service life or at the beginning of each shift in which the cartridges are used, whichever comes first. Organic vapor cartridges must never be used for longer than one shift for benzene even if the estimated service life is longer than one shift or the cartridge is used for a partial shift. Under certain conditions (e.g., high relative humidity) organic vapor cartridges estimated service life may be less than one shift. If the service life estimate is less than one shift, dispose of in accordance with your established change schedule. Consult OSHA standard 29 CFR 1910.1028 for more information on the change schedule or respirator selection."
 - Aniline:** CAS#: 62-53-3, Exposure: 50.00000 ppm, Correction Factor: 1, Exposure Limit: 2.00000 ppm, IDLH: 100.00000
- Cartridge Selection:** [07046] 6000 Series Organic Vapor Cartridge
- Environment Information:** Relative Humidity: <65%

Срок службы этого фильтра (расчетный) – 78 часов.

Но программа предупреждает, что американские санитарные правила по работе с бензолом (*OSHA standard 29 CFR 1910.1028 Benzene*) запрещают использовать противогазные фильтры для защиты от органических соединений более одной смены, так во время хранения может произойти перераспределение бензола внутри фильтра, и его концентрация при повторном использовании может оказаться недопустимо большой — сразу после начала использования.