



Reporting TURA Certain PFAS NOL: What you need to know

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Session Overview

Review TURA and TRI PFAS



Review Guidance Document



Expected uses in MA



DEP expectations



Best practices

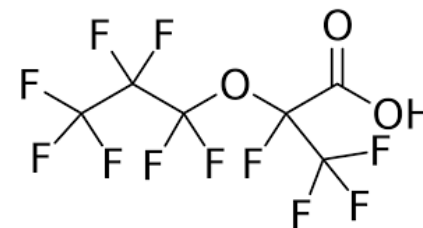
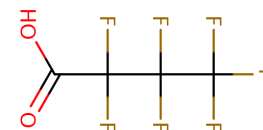
PFAS Tracking and Reporting: TRI and TURA

| | Report to TRI | TURA tracking starting | Report to DEP | How Reportable | Threshold |
|--------------------------|---------------|-----------------------------|--------------------------|----------------|--|
| TURA Certain PFAS NOL | ----- | January 1, 2022 | July 1, 2023 | As a category | 25,000 lbs. manufactured/ processed; 10,000 lbs. otherwise used |
| 172 TRI/TURA PFAS – 2020 | July 1,2021 | January 1, 2021 | July 1, 2022 | Individually | 100 lbs. (de minimis exemption applies; see MassDEP website for details) |
| Four TRI PFAS - 2021 | July 1, 2022 | January 1, 2023 | July 1, 2024 | | |
| Four TRI PFAS - 2022 | July 1, 2023 | | | | |
| Nine TRI PFAS - 2023 | July 1, 2024 | Anticipated January 1, 2024 | Anticipated July 1, 2025 | | |

TURA Certain PFAS NOL Category

For the 2022 Reporting Year, the Certain PFAS NOL category was added under TURA. The Certain PFAS NOL category is defined as those PFAS that contain:

- a perfluoroalkyl moiety with three or more carbons
(e.g., $-\text{C}_n\text{F}_{2n}-$, $n \geq 3$; or $\text{CF}_3-\text{C}_n\text{F}_{2n}-$, $n \geq 2$)
- a perfluoroalkylether moiety with two or more carbons
(e.g., $-\text{C}_n\text{F}_{2n}\text{OC}_m\text{F}_{2m}-$ or $-\text{C}_n\text{F}_{2n}\text{OC}_m\text{F}_m-$, n and $m \geq 1$)



wherein for the example structures shown, the dash (—) is not a bond to a hydrogen and may represent a straight or branched structure, and that are not otherwise listed.

PFAS Guidance

Lists were generated from PFAS that are known to be in commerce

Primarily from the Toxic Substances Control Act (TSCA)
Chemical Data Reporting (CDR)

Uses information from Organisation for Economic and
Co-operation Development (OECD)

Also included PFAS found in US water supplies

These lists are **NOT** exhaustive

[Table 1](#) lists PFAS that are individually reportable under TURA at the 100 lb threshold, after TURA adopted the TRI NDAA listings

| Table 1 TURA/TRI PFAS Substances to Continue Reporting Individually, if more than 100 lbs/year used | |
|--|---|
| 307-35-7 | <u>Perfluorooctylsulfonyl fluoride</u> |
| 307-55-1 | <u>Perfluorododecanoic acid</u> |
| 335-66-0 | <u>Octanoyl fluoride, pentadecafluoro-</u> |
| 335-67-1 | Perfluorooctanoic acid (<i>carcinogen de minimis</i> = 0.1%) |
| 335-71-7 | 1-Heptanesulfonyl fluoride, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-pentadecafluoro- |
| 335-76-2 | <u>Perfluorodecanoic acid</u> |
| 335-95-5 | Sodium perfluorooctanoate |
| 355-46-4 | <u>Perfluorohexanesulfonic acid</u> |
| 375-95-1 | <u>Perfluorononanoic acid</u> |
| 376-06-7 | <u>Perfluorotetradecanoic acid</u> |
| 376-14-7 | 2-[Ethyl[(<u>heptadecafluorooctyl</u>) <u>sulfonyl</u>] <u>amino</u>]ethyl methacrylate |
| 376-27-2 | Methyl perfluorooctanoate |
| 383-07-3 | 2-[Butyl[(<u>heptadecafluorooctyl</u>) <u>sulfonyl</u>] <u>amino</u>]ethyl acrylate |
| 423-82-5 | 2-[Ethyl[(<u>heptadecafluorooctyl</u>) <u>sulfonyl</u>] <u>amino</u>]ethyl acrylate |
| 678-39-7 | 1-Decanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro- |
| 865-86-1 | 1-Dodecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafuoro- |
| 1652-63-7 | 3-[[(<u>Heptadecafluorooctyl</u>) <u>sulfonyl</u>] <u>amino</u>]-N,N,N-trimethyl-1-propanaminium iodide |
| 1691-99-2 | N-Ethyl-N-(2- <u>hydroxyethyl</u>) <u>perfluorooctanesulfonamide</u> |
| 1763-23-1 | <u>Perfluorooctane sulfonic acid</u> |
| 1996-88-9 | 2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl ester |
| 2043-53-0 | <u>Decane</u> , 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-heptadecafluoro-10-iodo- |
| 2043-54-1 | Dodecane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10-heneicosafuoro-12-iodo- |
| 2144-54-9 | 2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafuorododecyl ester |
| 2263-09-4 | 1-Octanesulfonamide, N-butyl-1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-N-(2-hydroxyethyl)- |
| 2795-39-3 | Potassium <u>perfluorooctanesulfonate</u> |
| 2991-51-7 | Glycine, N-ethyl-N-[(<u>heptadecafluorooctyl</u>) <u>sulfonyl</u>]-, potassium salt |
| 3107-18-4 | <u>Cyclohexanesulfonic acid, undecafluoro-</u> , potassium salt |
| 3835-35-1 | <u>Ammonium perfluorooctanoate</u> |

The PFAS in Table 2 were already individually reportable under TURA. Continue to report them at typical TURA reporting thresholds.

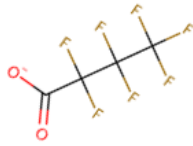
| Table 2. | |
|--|---|
| PFAS Substances to continue reporting individually when exceeding normal reporting thresholds | |
| 76-14-2 | 1,2-Dichloro-1,1,2,2-tetrafluoroethane |
| 76-15-3 | <u>Chloropentafluoroethane</u> |
| 116-14-3 | Tetrafluoroethylene |
| 124-73-2 | 1,2-Dibromotetrafluoroethane |
| 354-25-6 | 1-chloro-1,1,2,2-tetrafluoroethane |
| 422-56-0 | 3,3-Dichloro-1,1,1,2,2-pentafluoropropane |
| 507-55-1 | 1,3-Dichloro-1,1,2,2,3-pentafluoropropane |
| 2837-89-0 | 2-Chloro-1,1,1,2-tetrafluoroethane |

The PFAS in Table 3 are reportable under the TURA C1-C4 Halogenated Hydrocarbons category.

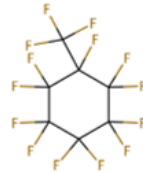
| Table 3. PFAS Substances reportable under the TURA C1-C4 Halogenated Hydrocarbons category | |
|---|---------------------------------------|
| 76-16-4 | <u>Pentafluoroethane</u> |
| 76-17-5 | 1,2,3-Trichloropentafluoropropane |
| 116-15-4 | <u>Hexafluoropropene</u> |
| 335-44-4 | 2,2,3-Trichloroheptafluorobutane |
| 354-33-6 | <u>Pentafluoroethane</u> |
| 354-64-3 | <u>pentafluoroiodoethane</u> |
| 359-35-3 | 1,1,2,2-Tetrafluoroethane |
| 360-89-4 | Perfluorobut-2-ene |
| 374-07-2 | 1,1-Dichlorotetrafluoroethane |
| 382-10-5 | 1,1-Bis(trifluoromethyl)ethene |
| 421-73-8 | 1,1,1,2-Tetrafluoro-2-chloropropane |
| 431-31-2 | 1,1,1,2,3-Pentafluoropropane |
| 431-63-0 | 1,1,1,2,3,3-Hexafluoropropane |
| 431-89-0 | 2H-Perfluoropropane |
| 677-69-0 | Heptafluoro-2-iodopropane |
| 690-39-1 | 1,1,1,3,3,3-Hexafluoropropane |
| 754-12-1 | 2,3,3,3-Tetrafluoropropene |
| 811-97-2 | 1,1,1,2-Tetrafluoroethane |
| 1320-37-2 | <u>Dichlorotetrafluoroethane</u> |
| 2252-83-7 | 1,2,3,3,3-Pentafluoropropene |
| 18599-20-7 | 1,4-Dibromo-1,1,2,2-tetrafluorobutane |
| 18599-22-9 | 2-Vinyl(1-bromoperfluoroethane) |

| Table 3. PFAS Substances reportable under the TURA C1-C4 Halogenated Hydrocarbons category | |
|---|---|
| 25398-32-7 | Ethene, 1,1,2,2-tetrafluoro-, telomer with 1,1,1,2,2-pentafluoro-2-iodoethane |
| 76-19-7 | Propane, 1,1,1,2,2,3,3,3-octafluoro- |
| 115-25-3 | <u>Cyclobutane</u> , 1,1,2,2,3,3,4,4-octafluoro- |
| 355-25-9 | Butane, 1,1,1,2,2,3,3,4,4,4-decafluoro- |
| 423-39-2 | Butane, 1,1,1,2,2,3,3,4,4-nonafluoro-4-iodo- |
| 754-34-7 | Propane, 1,1,1,2,2,3,3-heptafluoro-3-iodo- |

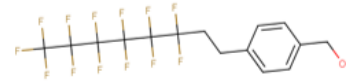
| | |
|--------------|---|
| 1708962-18-8 | Methanol, reaction products with 1,1,1,2,2,3,4,4,5,5,6,6,7,7,7-tetradecafluoro-3-heptene |
| 1708962-19-9 | Methanol, reaction products with 1,1,1,2,3,4,4,5,5,6,6,7,7,7-tetradecafluoro-2-heptene |
| 1807944-82-6 | 1-Octanesulfonic acid, 3,3,4,4,5,5,6,6,7,7,8,8-tridecafluoro-, barium salt (2:1) |
| NA | EFEP ethylene-tetrafluoroethylene-hexafluoropropylene terpolymer |
| 335-93-3 | Silver(I) perfluorooctanoate reportable under TRI as of 1/1/21 |
| 507-63-1 | Perfluorooctyl iodide (reportable under TRI as of 1/1/21) |
| 2395-00-8 | Potassium perfluorooctanoate (reportable under TRI as of 1/1/21) |
| 375-73-5 | <u>Perfluorobutane sulfonic acid (PFBS)</u> (reportable under TRI as of 1/1/22) |
| 29420-49-3 | <u>Potassium perfluorobutane sulfonate</u> (reportable under TRI as of 1/1/22) |
| 65104-45-2 | 2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafuorododecyl ester, polymer with 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorododecyl 2-methyl-2-propenoate, methyl 2-methyl-2-propenoate, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,14-pentacosafuorotetradecyl 2-methyl-2-propenoate and 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl 2-methyl-2-propenoate (reportable under TRI as of 1/1/22) |
| 203743-03-7 | 2-Propenoic acid, 2-methyl-, hexadecyl ester, polymers with 2-hydroxyethyl methacrylate, <u>gamma</u> -.omega.-perfluoro-C10-16-alkyl acrylate and stearyl methacrylate (reportable under TRI as of 1/1/22) |
| 45187-15-3 | <u>Perfluorobutanesulfonate</u> (reportable under TRI as of 1/1/22) |
| | |
| 375-22-4 | PFBA (reportable under TRI as of 1/1/23) |
| 45048-62-2 | <u>Perfluorobutanoate</u> (reportable under TRI as of 1/1/23) |
| 10495-86-0 | Ammonium <u>perfluorobutanoate</u> (reportable under TRI as of 1/1/23) |
| 2966-54-3 | Potassium <u>perfluorobutanoate</u> (reportable under TRI as of 1/1/23) |
| 2218-54-4 | Sodium <u>perfluorobutanoate</u> (reportable under TRI as of 1/1/23) |
| 2728655-42-1 | Alcohols, C8-16, y-w-perfluoro, reaction products with 1,6-diisocyanatohexane, glycidol and stearyl alc. (reportable under TRI as of 1/1/23) |
| 2738952-61-7 | Acetamide, N-[3-(<u>dimethylamino</u>)propyl]-, 2-[(y-w-perfluoro-C4-20-alkyl) <u>thio</u>] <u>derivs.</u> (reportable under TRI as of 1/1/23) |
| 2744262-09-5 | Acetic acid, 2-[(y-w-perfluoro-C4-20- <u>alkyl</u>) <u>thio</u>] <u>derivs.</u> , 2-hydroxypropyl esters (reportable under TRI as of 1/1/23) |
| 2742694-36-4 | Acetamide, N-(2-aminoethyl)-, 2-[(y-w-perfluoro-C4-20- <u>alkyl</u>) <u>thio</u>] <u>derivs.</u> , polymers with N1,N1-dimethyl-1,3-propanediamine, epichlorohydrin and ethylenediamine, oxidized (reportable under TRI as of 1/1/23) |



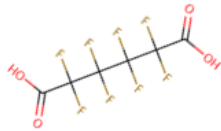
PFBA [375-22-4] three contiguous perfluorinated carbons



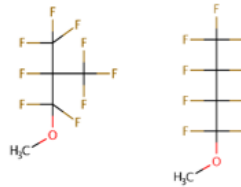
Perfluoromethylcyclohexane [355-02-2] cyclic perfluorinated ring



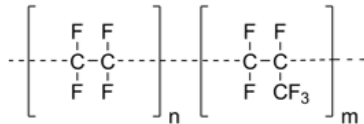
4-((Perfluorohexyl)ethyl)phenylmethanol [356055-76-0] six perfluorinated carbon alkyl chain with benzene ring as functional group



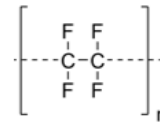
Perfluorohexanedioic acid [336-08-3] four perfluorinated carbon alkyl chain



HFE (hydrofluoroether) 7100 [mixture of 163702-08-7 & 163702-07-6] each component has ≥ 3 perfluorinated carbon alkyl chain

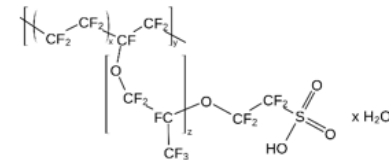


FEP Fluorinated ethylene propylene polymer [25067-11-2] polymer with repeating units that include 3 contiguous perfluorinated carbons

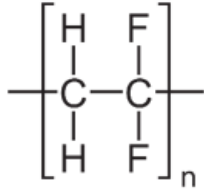


PTFE [9002-84-0] polymer - perfluorinated carbon repeating chain

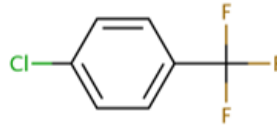
Examples of PFAS included in TURA Certain PFAS NOL Category



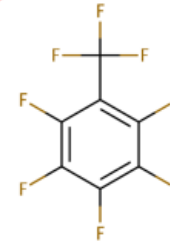
Nafion [31175-20-9] tetrafluoroethylene copolymer with sulfonic acid side chains - ≥ 3 contiguous perfluorinated carbons



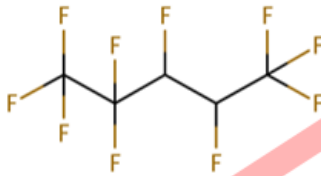
PVDF [24937-79-9]
polyvinylidene fluoride -
*alternating perfluorinated and
 non-fluorinated carbons, <3
 contiguous perfluorinated
 carbons in polymer chain*



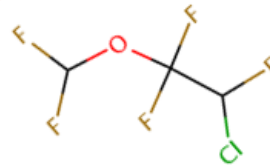
PCBTf [98-56-6]
Parachlorobenzotrifluoride -
only one perfluorinated carbon



Octafluorotoluene [434-64-0]
*only one perfluorinated carbon
 in alkyl chain. Fluorinated
 phenyl rings are not alkyl*



HFC 4310mee [138495-42-8]
 2H,3H-Decafluoropentane
*has 3 perfluorinated carbons
 but not contiguous*



Enflurane [13838-16-9] 2-chloro-1,1,2-
 trifluoroethyl difluoromethyl ether – is a
*fluorinated ether, but carbon on left of O is
 not perfluorinated (H bonded to C)*

Examples of PFAS **NOT
 included in TURA Certain
 PFAS NOL Category**

What if a CAS is not provided?

Check SDS (see examples)



Keywords to look for 'fluor', 'PFxx', 'fluorinated'



Check technical data sheet



Contact supplier



Contact OTA or TURI

Supplier Notification Letters

- OTA created template [Supplier Notification Letters](#) to help companies comply with the 2020 TRI PFAS listing and the Certain PFAS NOL category

TEMPLATE FOR CONTACTING SUPPLIERS REGARDING PFAS REGULATIONS

January 28, 2022

Recipient Name

Supplier Business Name

Address Line 1

Address Line 2

City, State ZIP

Account #: 00000000

RE: PFAS Supplier Notification Requirements under the Massachusetts Toxics Use Reduction Act (TURA) and the Toxics Release Inventory (TRI)

Dear Name,

Company Name (account #: 00000000) requests your cooperation and assistance to comply with new chemical listings under the Massachusetts Toxics Use Reduction Act (TURA) and the federal Emergency Planning and Community Right-to-Know Act (EPCRA).

Effective January 1, 2022, Massachusetts TURA covered industries, such as ours, are required to track the use of Certain Per- and Polyfluoroalkyl Substances Not Otherwise Listed (PFAS NOL) on the TURA list of Toxic or Hazardous Substances. PFAS in this category are those that: "contain a perfluoroalkyl moiety with three or more carbons (e.g., $-C_nF_{2n-}$, $n \geq 3$; or $CF_3-C_nF_{2n-}$, $n \geq 2$) or a perfluoroalkylether moiety with two or more carbons (e.g., $-C_nF_{2n}OC_mF_{2m-}$ or $-C_nF_{2n}OC_mF_{m-}$, n and $m \geq 1$), wherein for the example structures shown, the dash (-) is not a bond to a hydrogen and may represent a straight or branched structure" and are not otherwise listed on the TURA Toxic or Hazardous Substance List.

The TURA reporting thresholds for the Certain PFAS NOL category are 25,000 lb/year (manufactured or processed), or 10,000 lb/year (otherwise used).

In light of this revision to the list of substances reportable under TURA, we request notification of the presence and quantity of any PFAS fitting the above definition in any mixture or products furnished to Company Name from January 1, 2022 to the present.

In addition, in Section 7321 of the National Defense Authorization Act (NDAA), [179 PFAS are included on the Toxics Release Inventory \(TRI\) Chemical List](#), under Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA), also known as Title III of the Superfund Amendments and

Expected Uses in Massachusetts: Plastics and Resins

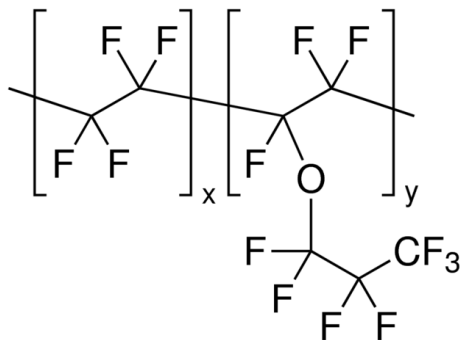


Fluoropolymer resins are used to manufacture products, where heat, low coefficient of friction or chemical resistance are needed

Uses in Massachusetts include insulation and jacketing of wire and cable

We expect several filers in this industry sector to trip thresholds

Daikin Neoflon Flowable Resin



* SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: NEOFLON PFA AP-201, 202, 210, 220, 230, 201SH, 211SH, 215SH, 221SH, 230SH, 231SH

Article number: AP2 STD

1.2 Relevant identified uses of the substance or mixture and uses advised against:

No further relevant information available.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

DAIKIN INDUSTRIES, LTD. CHEMICALS DIVISION:

Umeda Center Bldg., 4-12, Nakazaki-Nishi 2-chome, Kita-Ku, Osaka, JAPAN

Phone: (+81) 6-6373-4345 Fax: (+81) 6-6373-4281

Further information obtainable from: <http://www.daikin.com/>

1.4 Emergency telephone number:

Japan: +81-6-6349-7521

China: +86-512-5-232-0949, +86-21-34151689

South Korea: +82-2-568-1722

Americas: +1-256-306-5000

Europe: +49-211-179 225-0

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

The product is not classified according to the CLP regulation.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008: Not applicable

Signal word: Not applicable

SECTION 3: Composition/information on ingredients

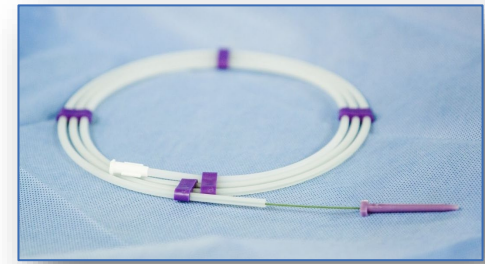
Information on ingredients:

26655-00-5 Perfluoro(alkoxy alkane)

100%

Additional information: For the wording of the listed hazard phrases refer to section 16.

Expected Uses in Massachusetts: Coatings

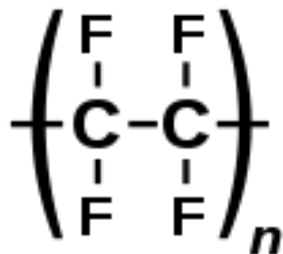


Fluoropolymer coatings reduce friction on the surface of medical devices such as catheters and guidewires and can provide color coding autoclave resistant finishes

Cookware would also be included in this use category

There may be some filers in this sector

Caswell PTFE Dispersion



MATERIAL SAFETY DATA SHEET



Date Issued: 09/22/2010
MSDS No: PTFE-DISP

3. COMPOSITION / INFORMATION ON INGREDIENTS

| Chemical Name | Wt. % | CAS | EINECS |
|-------------------------|-------|-----------|-----------|
| 2-propanol | < 1 | 67-63-0 | 200-661-0 |
| Polytetrafluoroethylene | < 55 | 9002-84-0 | |

4. FIRST AID MEASURES

EYES: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes.

SKIN: Immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

INGESTION: Swallowing less than an ounce will not cause significant harm. For larger amounts, do not induce vomiting, but give one or two glasses of water to drink and get medical attention.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.

5. FIRE FIGHTING MEASURES

FLAMMABLE LIMITS: Not flammable

FIRE FIGHTING PROCEDURES: As in any fire, wear self-contained breathing apparatus pressure-demand, (MSHA/NIOSH approved or equivalent) and full protective gear.

HAZARDOUS DECOMPOSITION PRODUCTS: May release toxic and corrosive hydrogen fluoride gas.

6. ACCIDENTAL RELEASE MEASURES

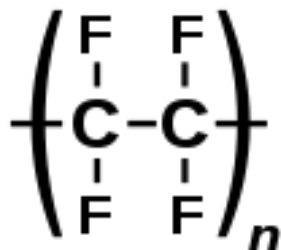
SMALL SPILL: Clean up spills immediately, observing precautions in Protective Equipment section.

7. HANDLING AND STORAGE

GENERAL PROCEDURES: Avoid contact with eyes, skin, and clothing.

HANDLING: Follow all MSDS/label precautions even after container is emptied because the material is

Chemours PTFE Fluoroplastic Dispersion DISP 30



SAFETY DATA SHEET



PTFE Fluoroplastic Dispersion DISP 30

Version
6.7

Revision Date:
09/11/2020

SDS Number:
1339068-00043

Date of last issue: 05/30/2020
Date of first issue: 02/27/2017

P280 Wear eye protection and face protection.

Response:

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 If eye irritation persists: Get medical attention.

Other hazards

The thermal decomposition vapors of fluorinated plastics may cause polymer fume fever with flu-like symptoms in humans, especially when smoking contaminated tobacco.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

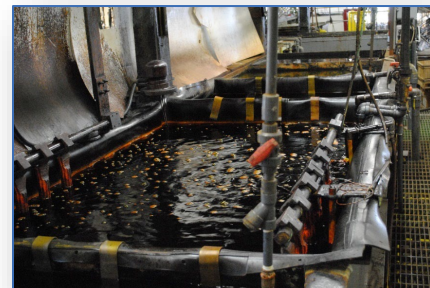
Chemical nature : Fluoropolymer dispersions

Components

| Chemical name | CAS-No. | Concentration (% w/w) |
|--|------------|-----------------------|
| 2,6,8-Trimethyl-4-nonyloxypolyethyleneoxyethanol | 60828-78-6 | >= 1 - < 5 |

Actual concentration is withheld as a trade secret

Expected Uses in Massachusetts: Metal Finishing

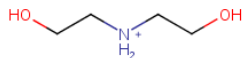
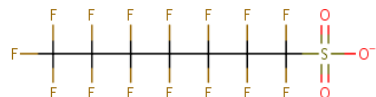


PFAS used as fume suppressant in chrome plating

PFAS can also be used in some electroless nickel or copper plating applications for lubricity

This is an important sector in terms of exposure and releases to the environment, but quantities may be below threshold

Caswell chrome fume suppressant



P304+P312
P332+P313
P264
P305+P351+P338

P337+P313
P234
P390

IF INHALED: Call a POISON CENTER/doctor/...if you feel unwell.
If skin irritation occurs: Get medical advice/attention.
Wash ... thoroughly after handling.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
Keep only in original container.
Absorb spillage to prevent material damage.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

1. WATER OR OTHER NON-REPORTABLE INGREDIENTS

| | |
|---------------|-----------|
| Concentration | 79 - 84 % |
| CAS no. | 7732-18-5 |

2. 2-(2-BUTOXYETHOXY)ETHANOL

| | |
|---------------|------------------|
| Concentration | 8 - 8 % (weight) |
| EC no. | 203-961-6 |
| CAS no. | 112-34-5 |
| Index no. | 603-096-00-8 |

- Serious eye damage/eye irritation (chapter 3.3), Cat. 2

| | |
|------|-------------------------------|
| H319 | Causes serious eye irritation |
|------|-------------------------------|

3. 1-Heptanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-pentadecafluoro-, compd with 2,2'-iminobis[ethanol] (1:1)

| | |
|---------------|------------------|
| Concentration | 8 - 8 % (weight) |
| CAS no. | 70225-15-9 |

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

3M Acid Mist Suppressant

3M™ Acid Mist Suppressant FC-1100

07/09/19

SECTION 3: Composition/information on ingredients

| Ingredient | C.A.S. No. | % by Wt |
|---|---------------|---------|
| Fluoroalkyl Acrylate Adduct (NJTS No. 04499600-5965P) | Trade Secret* | 48 - 52 |
| Water | 7732-18-5 | 45 - 50 |

NJTS or NJTSRN: New Jersey Trade Secret Registry Number.

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:

Wash with soap and water. If signs/symptoms develop, get medical attention.

Eye Contact:

Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

If Swallowed:

Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

Expected Uses in Massachusetts: Textiles



Typical applications would be stain or water repellency; military or firefighting gear

There are some facilities using PFAS in MA for this purpose

Grant: Nantucket PFAS Action Group

Daikin Unidyne TG-5543 Textile DWR

* *SECTION 3: Composition/information on ingredients*

Information on ingredients:

| | |
|---------------------------------------|---------------|
| <i>Fluoroalkyl acrylate copolymer</i> | <i>20-30%</i> |
|---------------------------------------|---------------|

| | |
|--|---------------|
| <i>9002-92-0 Poly(oxyethylene)alkyl(C12-14)ether</i> | <i><5%</i> |
|--|---------------|

Xi R36/38

Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319

| | |
|---------------------------------------|--------------|
| <i>24800-44-0 Tripropylene glycol</i> | <i>1-10%</i> |
|---------------------------------------|--------------|

| | |
|-------------------------------------|--------------|
| <i>3-Methoxy-3-methylbutan-1-ol</i> | <i>1-10%</i> |
|-------------------------------------|--------------|

| | |
|------------------------|---------------|
| <i>7732-18-5 Water</i> | <i>60-70%</i> |
|------------------------|---------------|

| | |
|---------------|---------------|
| <i>Others</i> | <i><5%</i> |
|---------------|---------------|

Additional information: For the wording of the listed hazard phrases refer to section 16.

Expected Uses in Massachusetts: Paper



PFAS used in paper facilities typically for coating

Also used for grease resistance in food packaging

Daikin paper grease

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: UNIDYNE TG-8111

Article number: UNTG8111 STD

1.2 Relevant identified uses of the substance or mixture and uses advised against:

No further relevant information available.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

DAIKIN INDUSTRIES, LTD. CHEMICALS DIVISION:

Umeda Center Bldg., 4-12, Nakazaki-Nishi 2-chome, Kita-Ku, Osaka, JAPAN

Phone: (+81) 6-6373-4345 Fax: (+81) 6-6373-4281

Further information obtainable from: <http://www.daikin.com/>

1.4 Emergency telephone number:

Japan: +81-6-6349-7521

China: +86-512-5-232-0949, +86-21-34151689

South Korea: +82-2-568-1722

Americas: CHEMTREC +1-800-424-9300 (Outside US/Canada: +1-703-527-3887)

Europe: +49-211-179 225-0

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

The product is not classified, according to the CLP regulation.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008: Not applicable

Signal word: Not applicable

SECTION 3: Composition/information on ingredients

Information on ingredients:

| | |
|--------------------------------|--------|
| Fluoroalkyl acrylate copolymer | 15-25% |
| CAS: 7732-18-5 Water | 75-85% |
| Others | < 1% |

Additional information: For the wording of the listed hazard phrases refer to section 16.

Expected Uses in Massachusetts: Electronic Components



Etching solution as surfactant

Likely many users in MA under threshold

Grant: Department of Plastics Engineering and Transene Company

Expected Uses in Massachusetts: Surface Cleaning



Hydrofluoroethers (HFE's) are included in the PFAS NOL definition

Popular products are HFE 7100 and HFE 7500

NuGenTec Fluosolv FX-AP Solvent

 Fire = 1
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

 HEALTH 2 Health = 2
 FIRE 1 Fire = 1
 REACTIVITY 0 Reactivity = 0






· **Hazard(s) not otherwise classified (HNOC):** None known

3 Composition/Information on Ingredients

· **Chemical characterization:** Mixtures

· **Description:** Solvent mixture

· **Dangerous Components:**

| | | |
|------------------------------------|---|--------------|
| CAS: 156-60-5 RTECS: KV 9400000 | trans-dichloroethylene  Flam. Liq. 2, H225;  Acute Tox. 4, H332; Aquatic Chronic 3, H412 | Proprietary% |
| | Proprietary  Acute Tox. 4, H302; Flam. Liq. 4, H227 | 12% |
| CAS: 163702-07-6 | Methyl nonafluorobutyl ether Aquatic Chronic 3, H412 | Proprietary% |
| CAS: 163702-08-7 | Methyl nonafluoroisobutyl ether Aquatic Chronic 3, H412 | Proprietary% |
| CAS: 67-63-0 RTECS: NT 8050000 | Isopropyl alcohol  Flam. Liq. 2, H225;  Eye Irrit. 2, H319; STOT SE 3, H336 | Proprietary% |

4 First-Aid Measures

· **Description of first aid measures:**

· **General information:** Take affected persons out into the fresh air.

· **After inhalation:**

Supply fresh air. If required, provide artificial respiration. Consult doctor if symptoms persist.

· **After skin contact:** Generally the product does not irritate the skin.

· **After eye contact:** Rinse opened eye for several minutes under running water.

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed:** Breathing difficulty

Fluosolv CAS Solvent

P403+P233

Store in a well-ventilated place. Keep container tightly closed.

P405

Store locked up.

P501

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 1

Fire = 0

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = 1

Fire = 0

Reactivity = 0

· **Hazard(s) not otherwise classified (HNOC):** None known

3 Composition/Information on Ingredients

· **Chemical characterization: Mixtures**

· **Description:** Mixture of substances listed below with non-hazardous additions.

· **Dangerous Components:**

| | |
|---|------|
| Proprietary Fluorinated Fluid Blend | >60% |
| ⚠ Acute Tox. 4, H332; Aquatic Chronic 3, H412 | |
| Proprietary Solvent | <40% |
| ⚠ Flam. Liq. 2, H225; ⚠ Eye Irrit. 2A, H319; STOT SE 3, H335-H336 | |

· **Additional information:**

The exact percentages of the ingredients of this mixture are considered to be proprietary and are withheld in accordance with the provisions of paragraph (i) of §1910.1200 of 29 CFR 1910.1200 Trade Secrets.

4 First-Aid Measures

· **Description of first aid measures:**

· **After inhalation:**

Supply fresh air. If required, provide artificial respiration. Consult doctor if symptoms persist.

· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

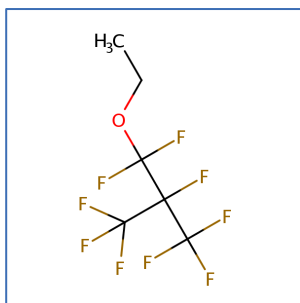
3M Novec 72DA

SECTION 3: Composition/information on ingredients

| Ingredient | C.A.S. No. | % by Wt |
|----------------------------|------------|------------------------|
| 1,2-Trans-dichloroethylene | 156-60-5 | 66 - 70 Trade Secret * |

3M™ Novec™ 72DA Engineered Fluid 07/07/21

| | | |
|---------------------------------|-------------|---------|
| Ethyl nonafluoroisobutyl ether | 163702-06-5 | 10 - 19 |
| Ethyl nonafluorobutyl ether | 163702-05-4 | 1 - 10 |
| METHYL NONAFLUOROISOBUTYL ETHER | 163702-08-7 | 5 - 10 |
| METHYL NONAFLUOROBUTYL ETHER | 163702-07-6 | 1 - 5 |
| Isopropyl alcohol | 67-63-0 | 1 - 3 |



Ethyl nonafluoroisobutyl ether 163702-06-5
From [EPA Comptox dashboard](#)

3M™ Novec™ 72DA Engineered Fluid

Introduction

3M™ Novec™ 72DA Engineered Fluid is a blend of hydrofluoroether methyl nonafluorobutyl ether ($C_4F_9OCH_3$), ethyl nonafluorobutyl ether ($C_4F_9OC_2H_5$), trans-1,2-dichloroethylene (t-DCE) and isopropanol. This mixture of solvents is a blend of azeotropes. The blend has been analyzed during evaporation and extended use in a vapor degreaser and found to have a consistent composition that is effective for medium- to heavy-duty degreasing and defluxing applications.

Novec 72DA fluid is ideal for a wide range of electronics and other precision cleaning applications. It is intended to replace CFCs, HCFCs, HFCs, nPB and chlorinated solvents. This Novec product has zero ozone depletion potential and other favorable environmental, health and safety properties (see Table 2).

The high solvency, low surface tension, nonflammability and stability of Novec 72DA fluid make it ideal for immersion and vapor degreasing applications. The isopropanol in Novec 72DA fluid provides enhanced removal of ionic contaminants.

Applications

- Cleaning, rinsing and drying agent
- Cleaning of rosin solder flux residues, oils, greases and waxes

Material Description

| Ingredients | 3M™ Novec™ 72DA Engineered Fluid |
|---|----------------------------------|
| Methyl Nonafluorobutyl Ether ($C_4F_9OCH_3$) | 10% by weight |
| Ethyl Nonafluorobutyl Ether ($C_4F_9OC_2H_5$) | 20% by weight |
| Trans-1,2-dichloroethylene (t-DCE) | 68% by weight |
| Isopropanol | 2% by weight |

Expected Uses in Massachusetts: Petroleum Products



Manufacture of lubricants

May be some filers

PFPE Lubricant



Technical Data Sheet

LOCTITE® LB 8209

Known as LOCTITE® Krytox® RFE Bearing Lubricant CP
May 2019

PRODUCT DESCRIPTION

LOCTITE® LB 8209 provides the following product characteristics:

| | |
|--------------------|--|
| Technology | Synthetic Grease |
| Base Oil Type | Perfluoropolyether (PFPE) |
| Thickener | Polytetrafluoroethylene (PTFE) |
| Appearance | White to off white buttery grease |
| Cure | Non-curing |
| Application | Lubrication |
| Specific Benefit | <ul style="list-style-type: none">• Thermally stable• Chemical resistant• Non-flammable• Non-toxic• Waterproof• Compatible with most plastics• Outperforms petroleum-based grease• Can be used with chlorinated systems• Insoluble in all but fluorinated solvents |

Henkel

Revision Number: 003.1

Issue date: 10/03/2017

1. PRODUCT AND COMPANY IDENTIFICATION

| | | | |
|---------------------|--|----------------------|--|
| Product name: | LOCTITE LB 8209 DUP OR LU PFPE HIGH PERF known as Dupont® Krytox® RFE PFPE Lubri | IDH number: | 234339 |
| Product type: | Lubricant | Item number: | 29710 |
| Restriction of Use: | None identified | Region: | United States |
| Company address: | Henkel Corporation One Henkel Way Rocky Hill, Connecticut 06067 | Contact information: | Telephone: (860) 571-5100 MEDICAL EMERGENCY Phone: Poison Control Center 1-877-671-4608 (toll free) or 1-303-592-1711 TRANSPORT EMERGENCY Phone: CHEMTREC 1-800-424-9300 (toll free) or 1-703-527-3887 Internet: www.henkelna.com |

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

NOT CLASSIFIED. READ ENTIRE SAFETY DATA SHEET.

| HAZARD CLASS | HAZARD CATEGORY |
|--------------|-----------------|
| None | None |

PICTOGRAM(S)

None

Precautionary Statements

| | |
|-------------|----------------|
| Prevention: | Not prescribed |
| Response: | Not prescribed |
| Storage: | Not prescribed |
| Disposal: | Not prescribed |

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

| Hazardous Component(s) | CAS Number | Percentage* |
|------------------------|------------|-------------|
| None | None | None |

* Exact percentages may vary or are trade secret. Concentration range is provided to assist users in providing appropriate protections.

Expected Uses in Massachusetts: AFFF

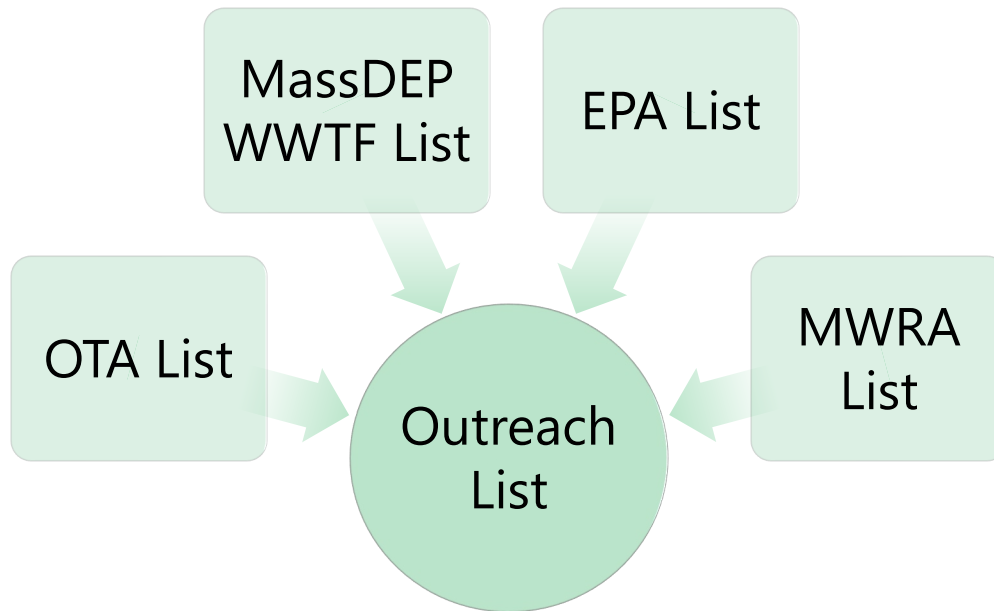


Municipal, government uses of AFFF not covered under TURA

Industrial uses covered only if you are processing or packaging
e.g., putting it into product

AFFF Alternatives Assessment Project with the Department of
Defense

Partnerships



DEP, EPA identified WWTF upstream from high-priority Drinking Water Protection Areas

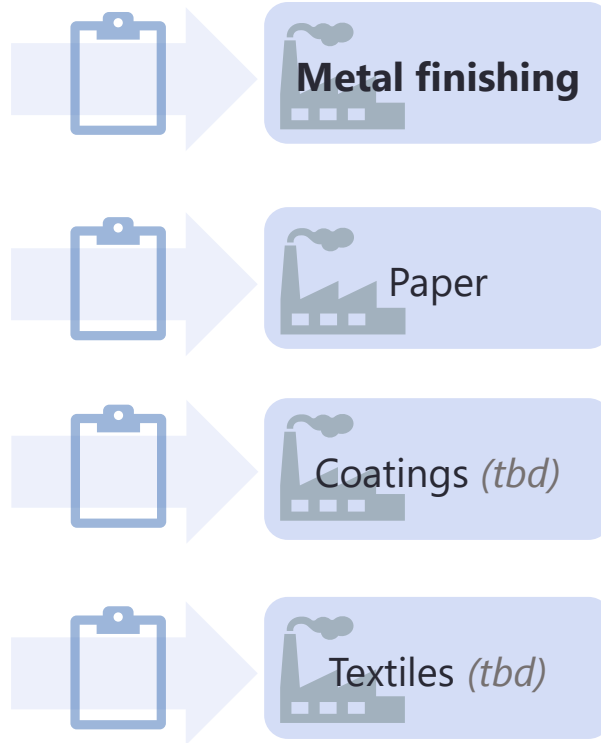
Agencies combined SIC/NAICS codes lists for upstream Significant Industrial Users

OTA is providing **free, confidential** technical assistance to industries upstream:

- Assistance identifying PFAS in products
- Helping companies communicate with suppliers
- Pollution prevention and toxics use reduction
- Climate change
- Resource conservation

Resources for Companies: PFAS Identification

Assessments
to identify
PFAS sources



- OTA technical staff flag likely sources of PFAS
- Companies may share list of CAS numbers with OTA
- OTA pursues research on products of concern
- Companies may opt to share product information with OTA to populate a list of PFAS-containing products

| Product List | Category |
|---|------------------|
| Simoniz Shield Special Teflon Formulation Lemon | Teflon car wax |
| Benchbrite CR1800 | chrome plating |
| Fumetrol 140 Atotech, | chrome plating |
| HCA-4, Hunter Chemical LLC | chrome plating |
| Clepo Chrome Macdermid | chrome plating |
| 3M fluorosurfactant FC4432 | surfactant |
| Daiken Neoflon Flowable Resin | plastics/resins |
| Caswell PTFE Dispersion | coatings |
| Chemours PTFE Fluoroplastic Dispersion DISP 30 | coatings |
| Caswell chrome fume suppressant | chrome plating |
| 3M Acid Mist Suppressant | chrome plating |
| NuGenTec Fluosolv FX-AP | Surface cleaning |
| Fluosolv CAS Solvent | Surface cleaning |
| 3M Novec 72DA | Surface cleaning |
| 3M Novec 7100 | Surface cleaning |
| Loctite LB 8209 | Lubricant |

Other resources for uses

- [Per- and Polyfluoroalkyl Substances and Alternatives in Coatings, Paints and Varnishes \(CPVs\) \(oecd.org\)](#)
- Gluge 2020: [An overview of the uses of per- and polyfluoroalkyl substances \(PFAS\) - Environmental Science: Processes & Impacts \(RSC Publishing\)](#)
- EPA Multi-industry [Multi-Industry Per- and Polyfluoroalkyl Substances \(PFAS\) Study – 2021 Preliminary Report \(epa.gov\)](#)
- MN metal finishing [PFAS in the metal plating and finishing industry \(state.mn.us\)](#)

Example: Teflon


- PTFE (e.g. Teflon) is included in the PFAS NOL Category.
- PTFE pellets being processed, such as in extrusion processes would be reportable, as would PTFE coating emulsions.
- Teflon articles, such as Teflon tape or spacers, would likely meet the article exemption.
- TFE, the monomer used in the manufacture of PTFE, is not included in the proposed PFAS NOL category. But is individually listed on TURA

What does DEP expect from filers in the first reporting year? *Facilities should:*

Evaluate chemicals used at the facility



Send inquiry letters to manufacturers requesting information on PFAS content of suspected PFAS containing materials.




Keep records of letters sent and responses received.




Follow up with manufacturer if you do not hear back from them and keep records of these follow-ups.

What does DEP expect from filers in the first reporting year? *Facilities should:*


FILE ON-TIME even if you have not received manufacturers' information (alert DEP via email at TURA.program@mass.gov if you are still awaiting a manufacturers' response)



Include an **estimate of your PFAS usage** in your filing and add a comment in the Form S, Section 5 data field stating that you have estimated your PFAS usage. **If a chemical contains fluorine, assume it is in the PFAS category until better information is available.**




Email the TURA program at TURA.program@mass.gov and describe how you estimated your PFAS in your Form S. Put **'PFAS estimated'** in the subject line.



When you receive the PFAS information from the manufacturer, submit an amended summary report via eDEP. You will be billed for any additional compounds when the filing is amended.

What does DEP expect from filers in the first reporting year? *Facilities should:*


If your facility reports a chemical included in both the 1047 Halogenated Compounds NOL (C1-C4) and 1300 Certain PFAS NOL chemical categories, you must report both categories.



Please refer to the TURA Reporting appendices pgs. 101 and 105 <https://www.mass.gov/lists/massdep-toxics-use-reduction-policies-guidance>



In the Form S Section 5 data field state the reported chemical(s) by name which falls into both categories and send an email to the TURA.Program@mass.gov alerting MassDEP of the entries.



Put **“Both Categories”** the subject line. Chemicals reported in both categories will only be billed one fee.

Best Practices

1

Get a new SDS
yearly

2

Keep copies of
SDS/Supplier
correspondence

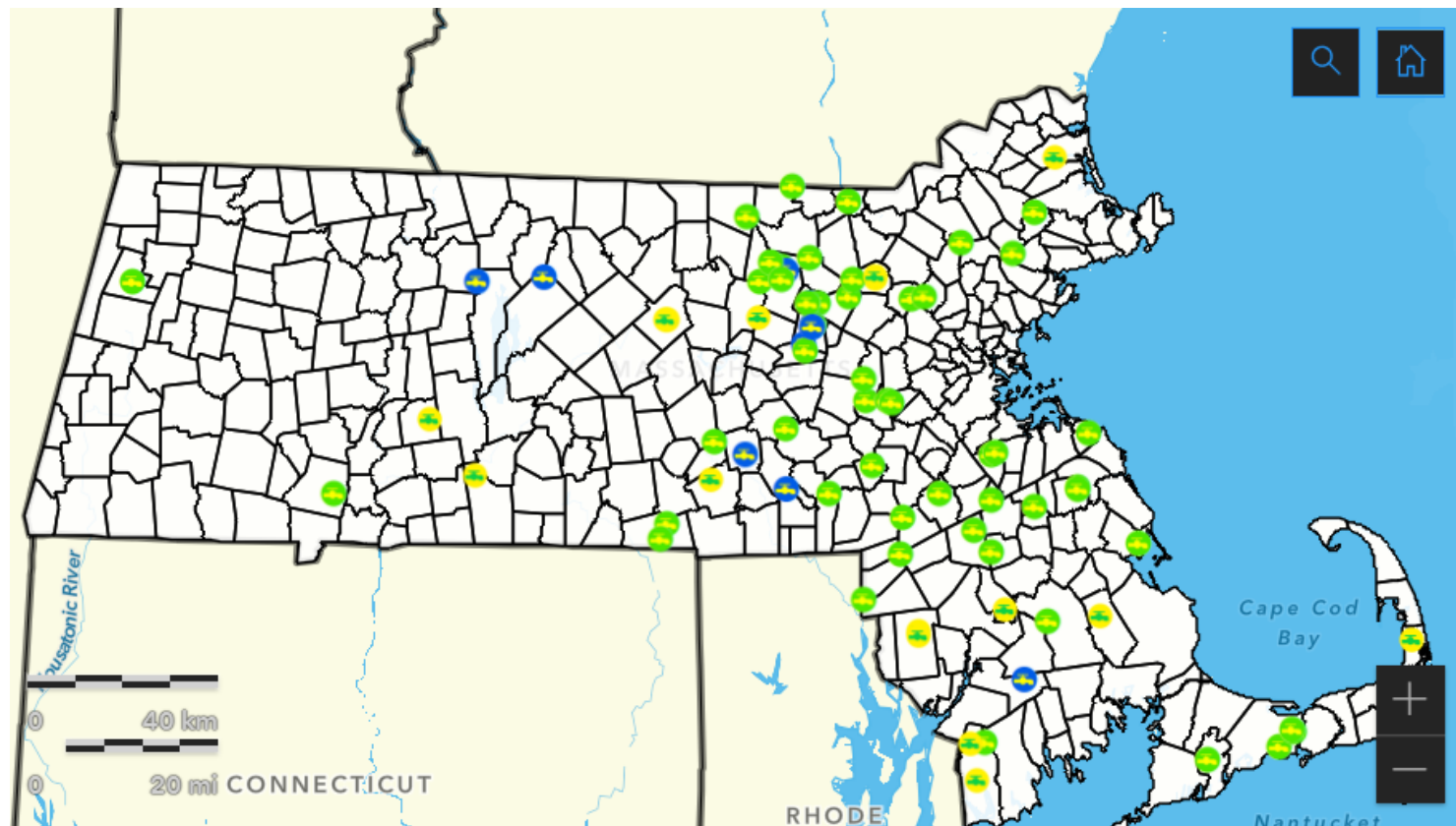
3

Reach out on
ALL products as
a first pass

4

Train purchasing
staff to question
fluorinated
products

Why a preventative approach?



[Per- and Polyfluoroalkyl Substances \(PFAS\) | Mass.gov](#)



The Massachusetts Toxics Use Reduction Institute

www.turi.org

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Lowell, MA 01852

Heather Tenney
Research Associate
Heather@turi.org

DEP
Tura.program@mass.gov