

# SAFETY DATA SHEET

GC/MS Checkout Standards Kit, Part Number 5184-3517

## Section 1. Identification

### 1.1 Product identifier

<b>Product name</b>	: GC/MS Checkout Standards Kit, Part Number 5184-3517	
<b>Part no. (chemical kit)</b>	: 5184-3517	
<b>Part no.</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard	05971-60571
	: PFDTD Calibrant	8500-8510
	: <u>GC - MS Multi-Component Checkout Sample</u>	<u>5185-5840</u>
	: Benzophenone in isooctane, 100 pg/μl	8500-5440-1
	: OFN in Isooctane, 1 pg/μl	8500-5441-1
	: GC/MS Checkout Sample, 10 ng/ul	05970-60045-1

**Validation date** : 9/30/2019

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

<b>Material uses</b>	: Reagents and Standards for Analytical Chemistry Laboratory Use	
	: Perfluorotributylamine -PFTBA- GC-MS Standard	0.5 ml
	: PFDTD Calibrant	1 ml
	: Benzophenone in isooctane, 100 pg/μl	1 x 1 ml
	: OFN in Isooctane, 1 pg/μl	2 x 1 ml
	: GC/MS Checkout Sample, 10 ng/ul	1 x 1 ml

### 1.3 Details of the supplier of the safety data sheet

**Supplier/Manufacturer** : Agilent Technologies, Inc.  
5301 Stevens Creek Blvd  
Santa Clara, CA 95051, USA  
800-227-9770

### 1.4 Emergency telephone number

**In case of emergency** : CHEMTREC®: 1-800-424-9300

## Section 2. Hazards identification

### 2.1 Classification of the substance or mixture

<b>OSHA/HCS status</b>	: Perfluorotributylamine - PFTBA- GC-MS Standard PFDTD Calibrant	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
	: Benzophenone in isooctane, 100 pg/μl	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
	: OFN in Isooctane, 1 pg/μl	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
	: GC/MS Checkout Sample, 10 ng/ul	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

### Classification of the substance or mixture

## Section 2. Hazards identification

### Perfluorotributylamine -PFTBA-

#### GC-MS Standard

H315	SKIN IRRITATION - Category 2
H319	EYE IRRITATION - Category 2A
H335	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

### Benzophenone in isooctane,

#### 100 pg/µl

H225	FLAMMABLE LIQUIDS - Category 2
H315	SKIN IRRITATION - Category 2
H319	EYE IRRITATION - Category 2A
H335	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
H336	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
H304	ASPIRATION HAZARD - Category 1
H400	AQUATIC HAZARD (ACUTE) - Category 1
H410	AQUATIC HAZARD (LONG-TERM) - Category 1

### OFN in Isooctane, 1 pg/µl

H225	FLAMMABLE LIQUIDS - Category 2
H315	SKIN IRRITATION - Category 2
H319	EYE IRRITATION - Category 2A
H335	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
H336	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
H304	ASPIRATION HAZARD - Category 1
H400	AQUATIC HAZARD (ACUTE) - Category 1
H410	AQUATIC HAZARD (LONG-TERM) - Category 1

### GC/MS Checkout Sample, 10

#### ng/ul

H225	FLAMMABLE LIQUIDS - Category 2
H315	SKIN IRRITATION - Category 2
H319	EYE IRRITATION - Category 2A
H335	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
H336	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
H304	ASPIRATION HAZARD - Category 1
H400	AQUATIC HAZARD (ACUTE) - Category 1
H410	AQUATIC HAZARD (LONG-TERM) - Category 1

### [2.2 GHS label elements](#)

## Section 2. Hazards identification

### Hazard pictograms

: Perfluorotributylamine -PFTBA-  
GC-MS Standard



Benzophenone in isooctane, 100  
pg/μl



OFN in Isooctane, 1 pg/μl



GC/MS Checkout Sample, 10 ng/ul



### Signal word

: Perfluorotributylamine -PFTBA-  
GC-MS Standard

Warning

PFDTD Calibrant

No signal word.

Benzophenone in isooctane, 100  
pg/μl

Danger

OFN in Isooctane, 1 pg/μl

Danger

GC/MS Checkout Sample, 10 ng/ul

Danger

### Hazard statements

: Perfluorotributylamine -PFTBA-  
GC-MS Standard

H319 - Causes serious eye irritation.

H315 - Causes skin irritation.

H335 - May cause respiratory irritation.

No known significant effects or critical hazards.

H225 - Highly flammable liquid and vapor.

PFDTD Calibrant

Benzophenone in isooctane, 100  
pg/μl

H319 - Causes serious eye irritation.

H315 - Causes skin irritation.

H304 - May be fatal if swallowed and enters  
airways.

H335 - May cause respiratory irritation.

H336 - May cause drowsiness or dizziness.

H410 - Very toxic to aquatic life with long lasting  
effects.

OFN in Isooctane, 1 pg/μl

H225 - Highly flammable liquid and vapor.

H319 - Causes serious eye irritation.

H315 - Causes skin irritation.

H304 - May be fatal if swallowed and enters  
airways.

H335 - May cause respiratory irritation.

H336 - May cause drowsiness or dizziness.

H410 - Very toxic to aquatic life with long lasting  
effects.

GC/MS Checkout Sample, 10 ng/ul

H225 - Highly flammable liquid and vapor.

H319 - Causes serious eye irritation.

H315 - Causes skin irritation.

H304 - May be fatal if swallowed and enters  
airways.

H335 - May cause respiratory irritation.

H336 - May cause drowsiness or dizziness.

H410 - Very toxic to aquatic life with long lasting

## Section 2. Hazards identification

### Precautionary statements

#### Prevention

: Perfluorotributylamine -PFTBA-  
GC-MS Standard

PFDTD Calibrant  
Benzophenone in isooctane, 100  
pg/ $\mu$ l

OFN in Isooctane, 1 pg/ $\mu$ l

GC/MS Checkout Sample, 10 ng/ $\mu$ l

effects.

P280 - Wear protective gloves. Wear eye or face protection.  
P271 - Use only outdoors or in a well-ventilated area.  
P261 - Avoid breathing vapor.  
P264 - Wash hands thoroughly after handling.  
Not applicable.  
P280 - Wear protective gloves. Wear eye or face protection.  
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.  
P242 - Use only non-sparking tools.  
P243 - Take precautionary measures against static discharge.  
P233 - Keep container tightly closed.  
P271 - Use only outdoors or in a well-ventilated area.  
P273 - Avoid release to the environment.  
P261 - Avoid breathing vapor.  
P264 - Wash hands thoroughly after handling.  
P280 - Wear protective gloves. Wear eye or face protection.  
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.  
P242 - Use only non-sparking tools.  
P243 - Take precautionary measures against static discharge.  
P233 - Keep container tightly closed.  
P271 - Use only outdoors or in a well-ventilated area.  
P273 - Avoid release to the environment.  
P261 - Avoid breathing vapor.  
P264 - Wash hands thoroughly after handling.  
P280 - Wear protective gloves. Wear eye or face protection.  
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.  
P242 - Use only non-sparking tools.  
P243 - Take precautionary measures against static discharge.  
P233 - Keep container tightly closed.  
P271 - Use only outdoors or in a well-ventilated area.  
P273 - Avoid release to the environment.  
P261 - Avoid breathing vapor.  
P264 - Wash hands thoroughly after handling.

## Section 2. Hazards identification

### Response

: Perfluorotributylamine -PFTBA-  
GC-MS Standard

P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.  
P302 + P352 + P362+P364 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse.  
P332 + P313 - If skin irritation occurs: Get medical attention.  
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.  
Not applicable.  
P391 - Collect spillage.

PFDTD Calibrant  
Benzophenone in isooctane, 100  
pg/μl

P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.  
P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.  
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.  
P302 + P352 + P362+P364 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse.  
P332 + P313 - If skin irritation occurs: Get medical attention.  
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.  
P391 - Collect spillage.

OFN in Isooctane, 1 pg/μl

P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.  
P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.  
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.  
P302 + P352 + P362+P364 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse.  
P332 + P313 - If skin irritation occurs: Get medical attention.  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

## Section 2. Hazards identification

	GC/MS Checkout Sample, 10 ng/ul	P337 + P313 - If eye irritation persists: Get medical attention. P391 - Collect spillage. P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. P302 + P352 + P362+P364 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. P332 + P313 - If skin irritation occurs: Get medical attention. 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. P405 - Store locked up.
<b>Storage</b>	: Perfluorotributylamine -PFTBA-GC-MS Standard PFDTD Calibrant Benzophenone in isooctane, 100 pg/μl	Not applicable. P405 - Store locked up.
	OFN in Isooctane, 1 pg/μl	P403 - Store in a well-ventilated place. P235 - Keep cool. P405 - Store locked up.
	GC/MS Checkout Sample, 10 ng/ul	P403 - Store in a well-ventilated place. P235 - Keep cool. P405 - Store locked up.
<b>Disposal</b>	: Perfluorotributylamine -PFTBA-GC-MS Standard	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	PFDTD Calibrant Benzophenone in isooctane, 100 pg/μl	Not applicable. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	OFN in Isooctane, 1 pg/μl	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	GC/MS Checkout Sample, 10 ng/ul	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
<b>Supplemental label elements</b>	: Perfluorotributylamine -PFTBA-GC-MS Standard	None known.
	PFDTD Calibrant	None known.
	Benzophenone in isooctane, 100 pg/μl	None known.
	OFN in Isooctane, 1 pg/μl	None known.
	GC/MS Checkout Sample, 10 ng/ul	None known.

### 2.3 Other hazards

## Section 2. Hazards identification

<b>Hazards not otherwise classified</b>	<b>:</b> Perfluorotributylamine -PFTBA- GC-MS Standard	None known.
	PFDTD Calibrant	None known.
	Benzophenone in isooctane, 100 pg/μl	None known.
	OFN in Isooctane, 1 pg/μl	None known.
	GC/MS Checkout Sample, 10 ng/ul	None known.

## Section 3. Composition/information on ingredients

<b>Substance/mixture</b>	<b>:</b> Perfluorotributylamine -PFTBA- GC-MS Standard	Substance
	PFDTD Calibrant	Substance
	Benzophenone in isooctane, 100 pg/μl	Mixture
	OFN in Isooctane, 1 pg/μl	Mixture
	GC/MS Checkout Sample, 10 ng/ul	Mixture

Ingredient name	%	CAS number
<b>Perfluorotributylamine -PFTBA- GC-MS Standard</b> Tris(Perfluorobutyl)amine	100	311-89-7
<b>PFDTD Calibrant</b> Propane, 1,1,1,2,3,3-hexafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-3-[1,2,2-trifluoro-2-(1,2,2,2-tetrafluoroethoxy)-1-(trifluoromethyl)ethoxy]-	100	3330-16-3
<b>Benzophenone in isooctane, 100 pg/μl</b> 2,2,4-trimethylpentane	≥90	540-84-1
<b>OFN in Isooctane, 1 pg/μl</b> 2,2,4-trimethylpentane	≥90	540-84-1
<b>GC/MS Checkout Sample, 10 ng/ul</b> 2,2,4-trimethylpentane	≥90	540-84-1

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.**

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### 4.1 Description of necessary first aid measures

<b>Eye contact</b>	<b>:</b> Perfluorotributylamine -PFTBA- GC-MS Standard	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
	PFDTD Calibrant	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	Benzophenone in isooctane, 100 pg/μl	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

## Section 4. First aid measures

	OFN in Isooctane, 1 pg/μl	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
	GC/MS Checkout Sample, 10 ng/ul	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
<b>Inhalation</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
	PFDTD Calibrant	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Benzophenone in isooctane, 100 pg/μl	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
	OFN in Isooctane, 1 pg/μl	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open



## Section 4. First aid measures

airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### Skin contact

: Perfluorotributylamine -PFTBA-  
GC-MS Standard

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

PFDTD Calibrant

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Benzophenone in isooctane, 100  
pg/μl

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

OFN in Isooctane, 1 pg/μl

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

GC/MS Checkout Sample, 10 ng/ul

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

### Ingestion

: Perfluorotributylamine -PFTBA-  
GC-MS Standard

Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

PFDTD Calibrant

Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable

## Section 4. First aid measures

Benzophenone in isooctane, 100  
pg/μl

for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

OFN in Isooctane, 1 pg/μl

Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

GC/MS Checkout Sample, 10 ng/ul

Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### [4.2 Most important symptoms/effects, acute and delayed](#)

#### [Potential acute health effects](#)

## Section 4. First aid measures

<b>Eye contact</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard	Causes serious eye irritation.
	PFDTD Calibrant	No known significant effects or critical hazards.
	Benzophenone in isooctane, 100 pg/μl	Causes serious eye irritation.
	OFN in Isooctane, 1 pg/μl	Causes serious eye irritation.
<b>Inhalation</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard	May cause respiratory irritation.
	PFDTD Calibrant	No known significant effects or critical hazards.
	Benzophenone in isooctane, 100 pg/μl	Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
	OFN in Isooctane, 1 pg/μl	Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
<b>Skin contact</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard	Causes skin irritation.
	PFDTD Calibrant	No known significant effects or critical hazards.
	Benzophenone in isooctane, 100 pg/μl	Causes skin irritation.
	OFN in Isooctane, 1 pg/μl	Causes skin irritation.
<b>Ingestion</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard	No known significant effects or critical hazards.
	PFDTD Calibrant	No known significant effects or critical hazards.
	Benzophenone in isooctane, 100 pg/μl	Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.
	OFN in Isooctane, 1 pg/μl	Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.
	GC/MS Checkout Sample, 10 ng/ul	Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

### Over-exposure signs/symptoms

<b>Eye contact</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard	Adverse symptoms may include the following:  pain or irritation watering redness
	PFDTD Calibrant	No specific data.
	Benzophenone in isooctane, 100 pg/μl	Adverse symptoms may include the following:  pain or irritation watering redness
	OFN in Isooctane, 1 pg/μl	Adverse symptoms may include the following: pain or irritation watering redness
	GC/MS Checkout Sample, 10 ng/ul	Adverse symptoms may include the following: pain or irritation watering

## Section 4. First aid measures

<b>Inhalation</b>	:	Perfluorotributylamine -PFTBA- GC-MS Standard	redness Adverse symptoms may include the following:
		PFDTD Calibrant Benzophenone in isooctane, 100 pg/μl	respiratory tract irritation coughing No specific data. Adverse symptoms may include the following:
		OFN in Isooctane, 1 pg/μl	respiratory tract irritation coughing nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness Adverse symptoms may include the following:
		GC/MS Checkout Sample, 10 ng/ul	respiratory tract irritation coughing nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness Adverse symptoms may include the following:
<b>Skin contact</b>	:	Perfluorotributylamine -PFTBA- GC-MS Standard	Adverse symptoms may include the following:
		PFDTD Calibrant Benzophenone in isooctane, 100 pg/μl	irritation redness No specific data. Adverse symptoms may include the following:
		OFN in Isooctane, 1 pg/μl	irritation redness Adverse symptoms may include the following:
		GC/MS Checkout Sample, 10 ng/ul	irritation redness Adverse symptoms may include the following:
<b>Ingestion</b>	:	Perfluorotributylamine -PFTBA- GC-MS Standard	No specific data.
		PFDTD Calibrant Benzophenone in isooctane, 100 pg/μl	No specific data. Adverse symptoms may include the following:
		OFN in Isooctane, 1 pg/μl	nausea or vomiting Adverse symptoms may include the following:
		GC/MS Checkout Sample, 10 ng/ul	nausea or vomiting Adverse symptoms may include the following:

## Section 4. First aid measures

### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

<b>Notes to physician</b>	: Perfluorotributylamine -PFTBA-GC-MS Standard	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
	PFDTD Calibrant	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Benzophenone in isooctane, 100 pg/μl	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	OFN in Isooctane, 1 pg/μl	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	GC/MS Checkout Sample, 10 ng/ul	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
<b>Specific treatments</b>	: Perfluorotributylamine -PFTBA-GC-MS Standard	No specific treatment.
	PFDTD Calibrant	No specific treatment.
	Benzophenone in isooctane, 100 pg/μl	No specific treatment.
	OFN in Isooctane, 1 pg/μl	No specific treatment.
	GC/MS Checkout Sample, 10 ng/ul	No specific treatment.
<b>Protection of first-aiders</b>	: Perfluorotributylamine -PFTBA-GC-MS Standard	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
	PFDTD Calibrant	No action shall be taken involving any personal risk or without suitable training.
	Benzophenone in isooctane, 100 pg/μl	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
	OFN in Isooctane, 1 pg/μl	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
	GC/MS Checkout Sample, 10 ng/ul	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### 5.1 Extinguishing media

<b>Suitable extinguishing media</b>	: Perfluorotributylamine -PFTBA-GC-MS Standard	Use an extinguishing agent suitable for the surrounding fire.
	PFDTD Calibrant	Use an extinguishing agent suitable for the surrounding fire.
	Benzophenone in isooctane, 100 pg/μl	Use dry chemical, CO <sub>2</sub> , water spray (fog) or foam.
	OFN in Isooctane, 1 pg/μl	Use dry chemical, CO <sub>2</sub> , water spray (fog) or foam.
<b>Unsuitable extinguishing media</b>	GC/MS Checkout Sample, 10 ng/ul	Use dry chemical, CO <sub>2</sub> , water spray (fog) or foam.
	: Perfluorotributylamine -PFTBA-GC-MS Standard	None known.
	PFDTD Calibrant	None known.
	Benzophenone in isooctane, 100 pg/μl	Do not use water jet.
	OFN in Isooctane, 1 pg/μl	Do not use water jet.
GC/MS Checkout Sample, 10 ng/ul	Do not use water jet.	

### 5.2 Special hazards arising from the substance or mixture

<b>Specific hazards arising from the chemical</b>	: Perfluorotributylamine -PFTBA-GC-MS Standard	In a fire or if heated, a pressure increase will occur and the container may burst.
	PFDTD Calibrant	In a fire or if heated, a pressure increase will occur and the container may burst.
	Benzophenone in isooctane, 100 pg/μl	Highly flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
	OFN in Isooctane, 1 pg/μl	Highly flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
	GC/MS Checkout Sample, 10 ng/ul	Highly flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. This material is very toxic to aquatic life

## Section 5. Fire-fighting measures

### Hazardous thermal decomposition products

: Perfluorotributylamine -PFTBA-  
GC-MS Standard

with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Decomposition products may include the following materials:

carbon dioxide  
carbon monoxide  
nitrogen oxides  
halogenated compounds

PFDTD Calibrant

Decomposition products may include the following materials:

carbon dioxide  
carbon monoxide  
halogenated compounds

Benzophenone in isooctane, 100  
pg/μl

Decomposition products may include the following materials:

carbon dioxide  
carbon monoxide

OFN in Isooctane, 1 pg/μl

Decomposition products may include the following materials:

carbon dioxide  
carbon monoxide

GC/MS Checkout Sample, 10 ng/ul

Decomposition products may include the following materials:

carbon dioxide  
carbon monoxide

### 5.3 Advice for firefighters

#### Special protective actions for fire-fighters

: Perfluorotributylamine -PFTBA-  
GC-MS Standard

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

PFDTD Calibrant

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Benzophenone in isooctane, 100  
pg/μl

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

OFN in Isooctane, 1 pg/μl

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

GC/MS Checkout Sample, 10 ng/ul

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

## Section 5. Fire-fighting measures

<b>Special protective equipment for fire-fighters</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	PFDTD Calibrant	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	Benzophenone in isooctane, 100 pg/μl	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	OFN in Isooctane, 1 pg/μl	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	GC/MS Checkout Sample, 10 ng/ul	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

<b>For non-emergency personnel</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
	PFDTD Calibrant	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
	Benzophenone in isooctane, 100 pg/μl	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
	OFN in Isooctane, 1 pg/μl	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.



## Section 6. Accidental release measures

	GC/MS Checkout Sample, 10 ng/ul	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
<b>For emergency responders :</b>	Perfluorotributylamine -PFTBA-GC-MS Standard	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	PFDTD Calibrant	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	Benzophenone in isooctane, 100 pg/μl	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	OFN in Isooctane, 1 pg/μl	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	GC/MS Checkout Sample, 10 ng/ul	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
<b>6.2 Environmental precautions :</b>	Perfluorotributylamine -PFTBA-GC-MS Standard	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
	PFDTD Calibrant	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
	Benzophenone in isooctane, 100 pg/μl	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.
	OFN in Isooctane, 1 pg/μl	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.
	GC/MS Checkout Sample, 10 ng/ul	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has

## Section 6. Accidental release measures

caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

### 6.3 Methods and materials for containment and cleaning up

<b>Methods for cleaning up</b>	: Perfluorotributylamine -PFTBA-GC-MS Standard	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	PFDTD Calibrant	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	Benzophenone in isooctane, 100 pg/μl	Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	OFN in Isooctane, 1 pg/μl	Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	GC/MS Checkout Sample, 10 ng/ul	Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

## Section 7. Handling and storage

### 7.1 Precautions for safe handling

<b>Protective measures</b>	: Perfluorotributylamine -PFTBA-GC-MS Standard	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
	PFDTD Calibrant	Put on appropriate personal protective equipment (see Section 8).
	Benzophenone in isooctane, 100 pg/μl	Put on appropriate personal protective equipment (see Section 8). Do not swallow. Avoid contact with eyes, skin and clothing. Avoid breathing vapor

## Section 7. Handling and storage

or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

OFN in Isooctane, 1 pg/μl

Put on appropriate personal protective equipment (see Section 8). Do not swallow. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

GC/MS Checkout Sample, 10 ng/ul

Put on appropriate personal protective equipment (see Section 8). Do not swallow. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

### Advice on general occupational hygiene

: Perfluorotributylamine -PFTBA-GC-MS Standard

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures. Eating, drinking and smoking should be prohibited

PFDTD Calibrant

## Section 7. Handling and storage

Benzophenone in isooctane, 100 pg/μl	in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
OFN in Isooctane, 1 pg/μl	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
GC/MS Checkout Sample, 10 ng/ul	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

### 7.2 Conditions for safe storage, including any incompatibilities

: Perfluorotributylamine -PFTBA-GC-MS Standard	Store between the following temperatures: 2 to 8°C (35.6 to 46.4°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
PFDTD Calibrant	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
Benzophenone in isooctane, 100 pg/μl	Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition

## Section 7. Handling and storage

OFN in Isooctane, 1 pg/μl	sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use. Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
GC/MS Checkout Sample, 10 ng/ul	Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

### 7.3 Specific end use(s)

#### Recommendations

: Perfluorotributylamine -PFTBA-GC-MS Standard	Industrial applications, Professional applications.
PFDTD Calibrant	Industrial applications, Professional applications.
Benzophenone in isooctane, 100 pg/μl	Industrial applications, Professional applications.
OFN in Isooctane, 1 pg/μl	Industrial applications, Professional applications.
GC/MS Checkout Sample, 10 ng/ul	Industrial applications, Professional applications.

#### Industrial sector specific solutions

: Perfluorotributylamine -PFTBA-GC-MS Standard	Not applicable.
PFDTD Calibrant	Not applicable.
Benzophenone in isooctane, 100 pg/μl	Not applicable.
OFN in Isooctane, 1 pg/μl	Not applicable.
GC/MS Checkout Sample, 10 ng/ul	Not applicable.

## Section 8. Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
<b>Perfluorotributylamine -PFTBA- GC-MS Standard</b> Tris(Perfluorobutyl)amine	None.
<b>PFDTD Calibrant</b> Propane, 1,1,1,2,3,3-hexafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-3-[1,2,2-trifluoro-2-(1,2,2,2-tetrafluoroethoxy)-1-(trifluoromethyl)ethoxy]-	None.
<b>Benzophenone in isooctane, 100 pg/μl</b> 2,2,4-trimethylpentane	<b>ACGIH TLV (United States, 3/2018).</b> TWA: 300 ppm 8 hours.
<b>OFN in Isooctane, 1 pg/μl</b> 2,2,4-trimethylpentane	<b>ACGIH TLV (United States, 3/2018).</b> TWA: 300 ppm 8 hours.
<b>GC/MS Checkout Sample, 10 ng/ul</b> 2,2,4-trimethylpentane	<b>ACGIH TLV (United States, 3/2018).</b> TWA: 300 ppm 8 hours.

### 8.2 Exposure controls

#### Appropriate engineering controls

- Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

#### Environmental exposure controls

- Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

#### Individual protection measures

##### Hygiene measures

- Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

##### Eye/face protection

- Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

##### Skin protection

##### Hand protection

- Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

## Section 8. Exposure controls/personal protection

- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## Section 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

- Physical state** : Perfluorotributylamine -PFTBA- Liquid. [Hygroscopic.]  
GC-MS Standard  
PFDTD Calibrant Liquid.  
Benzophenone in isooctane, 100 pg/μl Liquid.  
OFN in Isooctane, 1 pg/μl Liquid.  
GC/MS Checkout Sample, 10 ng/ul Liquid.
- Color** : Perfluorotributylamine -PFTBA- Colorless.  
GC-MS Standard  
PFDTD Calibrant Not available.  
Benzophenone in isooctane, 100 pg/μl Light  
OFN in Isooctane, 1 pg/μl Colorless.  
GC/MS Checkout Sample, 10 ng/ul Clear. / Colorless.
- Odor** : Perfluorotributylamine -PFTBA- Odorless.  
GC-MS Standard  
PFDTD Calibrant Not available.  
Benzophenone in isooctane, 100 pg/μl Gasoline-like [Strong]  
OFN in Isooctane, 1 pg/μl Gasoline-like [Strong]  
GC/MS Checkout Sample, 10 ng/ul Gasoline-like
- Odor threshold** : Perfluorotributylamine -PFTBA- Not available.  
GC-MS Standard  
PFDTD Calibrant Not available.  
Benzophenone in isooctane, 100 pg/μl Not available.  
OFN in Isooctane, 1 pg/μl Not available.  
GC/MS Checkout Sample, 10 ng/ul Not available.
- pH** : Perfluorotributylamine -PFTBA- Not available.  
GC-MS Standard  
PFDTD Calibrant Not available.  
Benzophenone in isooctane, 100 pg/μl Not available.  
OFN in Isooctane, 1 pg/μl Not available.  
GC/MS Checkout Sample, 10 ng/ul Not available.

## Section 9. Physical and chemical properties

<b>Melting point</b>	:	Perfluorotributylamine -PFTBA-	-50°C (-58°F)
		GC-MS Standard	
		PFDTD Calibrant	Not available.
		Benzophenone in isooctane, 100 pg/μl	-107°C (-160.6°F)
		GC/MS Checkout Sample, 10 ng/ul	-107°C (-160.6°F)
<b>Boiling point</b>	:	Perfluorotributylamine -PFTBA-	170 to 180°C (338 to 356°F)
		GC-MS Standard	
		PFDTD Calibrant	170°C (338°F)
		Benzophenone in isooctane, 100 pg/μl	99.2°C (210.6°F)
		GC/MS Checkout Sample, 10 ng/ul	99.2°C (210.6°F)
<b>Flash point</b>	:	Perfluorotributylamine -PFTBA-	Not available.
		GC-MS Standard	
		PFDTD Calibrant	Not available.
		Benzophenone in isooctane, 100 pg/μl	Closed cup: -18 to 23°C (-0.4 to 73.4°F)
		GC/MS Checkout Sample, 10 ng/ul	Open cup: 4.5°C (40.1°F) Closed cup: -18 to 23°C (-0.4 to 73.4°F)
<b>Evaporation rate</b>	:	Perfluorotributylamine -PFTBA-	Not available.
		GC-MS Standard	
		PFDTD Calibrant	Not available.
		Benzophenone in isooctane, 100 pg/μl	3.6 (butyl acetate = 1)
		GC/MS Checkout Sample, 10 ng/ul	Not available.
<b>Flammability (solid, gas)</b>	:	Perfluorotributylamine -PFTBA-	Not applicable.
		GC-MS Standard	
		PFDTD Calibrant	Not applicable.
		Benzophenone in isooctane, 100 pg/μl	Not applicable.
		GC/MS Checkout Sample, 10 ng/ul	Not applicable.
<b>Lower and upper explosive (flammable) limits</b>	:	Perfluorotributylamine -PFTBA-	Not available.
		GC-MS Standard	
		PFDTD Calibrant	Not available.
		Benzophenone in isooctane, 100 pg/μl	Lower: 1.1%
		GC/MS Checkout Sample, 10 ng/ul	Upper: <=13% Lower: 1.1%
<b>Vapor pressure</b>	:	Perfluorotributylamine -PFTBA-	0.17 kPa (1.3 mm Hg) [room temperature]
		GC-MS Standard	
		PFDTD Calibrant	0.76 kPa (5.7 mm Hg) [room temperature]
		Benzophenone in isooctane, 100 pg/μl	5.5 kPa (41 mm Hg) [room temperature]
		GC/MS Checkout Sample, 10 ng/ul	5.5 kPa (41 mm Hg) [room temperature]
<b>Vapor density</b>	:		



## Section 9. Physical and chemical properties

	Perfluorotributylamine -PFTBA- GC-MS Standard	23.3 [Air = 1]
	PFDTD Calibrant	21.31 [Air = 1]
	Benzophenone in isooctane, 100 pg/μl	>1 [Air = 1]
	OFN in Isooctane, 1 pg/μl	3.93 [Air = 1]
	GC/MS Checkout Sample, 10 ng/ul	3.93 [Air = 1]
<b>Relative density</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard	1.883
	PFDTD Calibrant	Not available.
	Benzophenone in isooctane, 100 pg/μl	Not available.
	OFN in Isooctane, 1 pg/μl	0.692
	GC/MS Checkout Sample, 10 ng/ul	Not available.
<b>Solubility</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard	Insoluble in the following materials: cold water, hot water and methanol.
	PFDTD Calibrant	Very slightly soluble in the following materials: cold water and hot water.
	Benzophenone in isooctane, 100 pg/μl	Insoluble in the following materials: cold water and hot water.
	OFN in Isooctane, 1 pg/μl	Insoluble in the following materials: cold water and hot water.
	GC/MS Checkout Sample, 10 ng/ul	Insoluble in the following materials: cold water and hot water.
<b>Partition coefficient: n-octanol/water</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard	Not available.
	PFDTD Calibrant	Not available.
	Benzophenone in isooctane, 100 pg/μl	4.5
	OFN in Isooctane, 1 pg/μl	Not available.
	GC/MS Checkout Sample, 10 ng/ul	Not available.
<b>Auto-ignition temperature</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard	Not available.
	PFDTD Calibrant	Not available.
	Benzophenone in isooctane, 100 pg/μl	418°C (784.4°F)
	OFN in Isooctane, 1 pg/μl	418°C (784.4°F)
	GC/MS Checkout Sample, 10 ng/ul	418°C (784.4°F)
<b>Decomposition temperature</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard	Not available.
	PFDTD Calibrant	Not available.
	Benzophenone in isooctane, 100 pg/μl	Not available.
	OFN in Isooctane, 1 pg/μl	Not available.
	GC/MS Checkout Sample, 10 ng/ul	Not available.
<b>Viscosity</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard	Not available.
	PFDTD Calibrant	Not available.
	Benzophenone in isooctane, 100 pg/μl	Not available.
	OFN in Isooctane, 1 pg/μl	Not available.
	GC/MS Checkout Sample, 10 ng/ul	Not available.

## Section 10. Stability and reactivity

<b>10.1 Reactivity</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard PFDTD Calibrant	No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients.
	Benzophenone in isooctane, 100 pg/μl	No specific test data related to reactivity available for this product or its ingredients.
	OFN in Isooctane, 1 pg/μl	No specific test data related to reactivity available for this product or its ingredients.
	GC/MS Checkout Sample, 10 ng/ul	No specific test data related to reactivity available for this product or its ingredients.
<b>10.2 Chemical stability</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard PFDTD Calibrant	The product is stable. The product is stable.
	Benzophenone in isooctane, 100 pg/μl	The product is stable.
	OFN in Isooctane, 1 pg/μl	The product is stable.
	GC/MS Checkout Sample, 10 ng/ul	The product is stable.
<b>10.3 Possibility of hazardous reactions</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard PFDTD Calibrant	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.
	Benzophenone in isooctane, 100 pg/μl	Under normal conditions of storage and use, hazardous reactions will not occur.
	OFN in Isooctane, 1 pg/μl	Under normal conditions of storage and use, hazardous reactions will not occur.
	GC/MS Checkout Sample, 10 ng/ul	Under normal conditions of storage and use, hazardous reactions will not occur.
<b>10.4 Conditions to avoid</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard PFDTD Calibrant	No specific data. No specific data.
	Benzophenone in isooctane, 100 pg/μl	Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
	OFN in Isooctane, 1 pg/μl	Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
	GC/MS Checkout Sample, 10 ng/ul	Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
<b>10.5 Incompatible materials</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard PFDTD Calibrant	May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials.
	Benzophenone in isooctane, 100 pg/μl	Reactive or incompatible with the following materials: oxidizing materials
	OFN in Isooctane, 1 pg/μl	Reactive or incompatible with the following

## Section 10. Stability and reactivity

		materials: oxidizing materials
	GC/MS Checkout Sample, 10 ng/ul	Reactive or incompatible with the following materials: oxidizing materials
<b>10.6 Hazardous decomposition products</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	PFDTD Calibrant	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Benzophenone in isooctane, 100 pg/μl	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	OFN in Isooctane, 1 pg/μl	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	GC/MS Checkout Sample, 10 ng/ul	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
<b>Perfluorotributylamine - PFTBA- GC-MS Standard</b> Tris(Perfluorobutyl)amine	LD50 Oral	Rat	>10 g/kg	-
<b>Benzophenone in isooctane , 100 pg/μl</b> 2,2,4-trimethylpentane	LC50 Inhalation Vapor	Rat - Male, Female	>33.52 mg/l	4 hours
	LD50 Oral	Rat - Male, Female	>5000 mg/kg	-
<b>OFN in Isooctane, 1 pg/μl</b> 2,2,4-trimethylpentane	LC50 Inhalation Vapor	Rat - Male, Female	>33.52 mg/l	4 hours
	LD50 Oral	Rat - Male, Female	>5000 mg/kg	-
<b>GC/MS Checkout Sample, 10 ng/ul</b> 2,2,4-trimethylpentane	LC50 Inhalation Vapor	Rat - Male, Female	>33.52 mg/l	4 hours
	LD50 Oral	Rat - Male, Female	>5000 mg/kg	-

#### Irritation/Corrosion

Not available.

#### Sensitization

Not available.

## Section 11. Toxicological information

### Mutagenicity

**Conclusion/Summary** : Not available.

### Carcinogenicity

**Conclusion/Summary** : Not available.

### Reproductive toxicity

**Conclusion/Summary** : Not available.

### Teratogenicity

**Conclusion/Summary** : Not available.

### Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
<b>Perfluorotributylamine -PFTBA- GC-MS Standard</b> Tris(Perfluorobutyl)amine	Category 3	Not applicable.	Respiratory tract irritation
<b>Benzophenone in isooctane, 100 pg/μl</b> 2,2,4-trimethylpentane	Category 3 Category 3	Not applicable. Not applicable.	Narcotic effects Respiratory tract irritation
<b>OFN in Isooctane, 1 pg/μl</b> 2,2,4-trimethylpentane	Category 3 Category 3	Not applicable. Not applicable.	Narcotic effects Respiratory tract irritation
<b>GC/MS Checkout Sample, 10 ng/ul</b> 2,2,4-trimethylpentane	Category 3 Category 3	Not applicable. Not applicable.	Narcotic effects Respiratory tract irritation

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Name	Result
<b>Benzophenone in isooctane, 100 pg/μl</b> Benzophenone in isooctane, 100 pg/μl 2,2,4-trimethylpentane	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1
<b>OFN in Isooctane, 1 pg/μl</b> OFN in Isooctane, 1 pg/μl 2,2,4-trimethylpentane	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1
<b>GC/MS Checkout Sample, 10 ng/ul</b> GC/MS Checkout Sample, 10 ng/ul 2,2,4-trimethylpentane	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1

### Information on the likely routes of exposure

: Perfluorotributylamine -PFTBA-  
GC-MS Standard  
PFDTD Calibrant  
Benzophenone in isooctane, 100  
pg/μl  
OFN in Isooctane, 1 pg/μl

Routes of entry anticipated: Oral, Dermal,  
Inhalation.  
Not available.  
Routes of entry anticipated: Oral, Dermal,  
Inhalation.  
Routes of entry anticipated: Oral, Dermal,  
Inhalation.

## Section 11. Toxicological information

GC/MS Checkout Sample, 10 ng/ul Routes of entry anticipated: Oral, Dermal, Inhalation.

### Potential acute health effects

#### **Eye contact**

- : Perfluorotributylamine -PFTBA- GC-MS Standard Causes serious eye irritation.
- PFDTD Calibrant No known significant effects or critical hazards.
- Benzophenone in isooctane, 100 pg/μl Causes serious eye irritation.
- OFN in Isooctane, 1 pg/μl Causes serious eye irritation.
- GC/MS Checkout Sample, 10 ng/ul Causes serious eye irritation.

#### **Inhalation**

- : Perfluorotributylamine -PFTBA- GC-MS Standard May cause respiratory irritation.
- PFDTD Calibrant No known significant effects or critical hazards.
- Benzophenone in isooctane, 100 pg/μl Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
- OFN in Isooctane, 1 pg/μl Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
- GC/MS Checkout Sample, 10 ng/ul Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.

#### **Skin contact**

- : Perfluorotributylamine -PFTBA- GC-MS Standard Causes skin irritation.
- PFDTD Calibrant No known significant effects or critical hazards.
- Benzophenone in isooctane, 100 pg/μl Causes skin irritation.
- OFN in Isooctane, 1 pg/μl Causes skin irritation.
- GC/MS Checkout Sample, 10 ng/ul Causes skin irritation.

#### **Ingestion**

- : Perfluorotributylamine -PFTBA- GC-MS Standard No known significant effects or critical hazards.
- PFDTD Calibrant No known significant effects or critical hazards.
- Benzophenone in isooctane, 100 pg/μl Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.
- OFN in Isooctane, 1 pg/μl Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.
- GC/MS Checkout Sample, 10 ng/ul Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

### Symptoms related to the physical, chemical and toxicological characteristics

#### **Eye contact**

- : Perfluorotributylamine -PFTBA- GC-MS Standard Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- PFDTD Calibrant No specific data.
- Benzophenone in isooctane, 100 pg/μl Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- OFN in Isooctane, 1 pg/μl Adverse symptoms may include the following:  
pain or irritation  
watering

## Section 11. Toxicological information

	GC/MS Checkout Sample, 10 ng/ul	redness Adverse symptoms may include the following: pain or irritation watering redness
<b>Inhalation</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard	Adverse symptoms may include the following:  respiratory tract irritation coughing No specific data.
	PFDTD Calibrant Benzophenone in isooctane, 100 pg/μl	Adverse symptoms may include the following:  respiratory tract irritation coughing nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
	OFN in Isooctane, 1 pg/μl	Adverse symptoms may include the following: respiratory tract irritation coughing nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
	GC/MS Checkout Sample, 10 ng/ul	Adverse symptoms may include the following: respiratory tract irritation coughing nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
<b>Skin contact</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard	Adverse symptoms may include the following:  irritation redness
	PFDTD Calibrant Benzophenone in isooctane, 100 pg/μl	No specific data. Adverse symptoms may include the following:  irritation redness
	OFN in Isooctane, 1 pg/μl	Adverse symptoms may include the following: irritation redness
	GC/MS Checkout Sample, 10 ng/ul	Adverse symptoms may include the following: irritation redness
<b>Ingestion</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard	No specific data.
	PFDTD Calibrant Benzophenone in isooctane, 100 pg/μl	No specific data. Adverse symptoms may include the following:  nausea or vomiting
	OFN in Isooctane, 1 pg/μl	Adverse symptoms may include the following: nausea or vomiting

## Section 11. Toxicological information

GC/MS Checkout Sample, 10 ng/ul Adverse symptoms may include the following:  
nausea or vomiting

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Long term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Potential chronic health effects

<b>General</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard	No known significant effects or critical hazards.
	PFDTD Calibrant	No known significant effects or critical hazards.
	Benzophenone in isooctane, 100 pg/ul	No known significant effects or critical hazards.
	OFN in Isooctane, 1 pg/ul	No known significant effects or critical hazards.
	GC/MS Checkout Sample, 10 ng/ul	No known significant effects or critical hazards.
<b>Carcinogenicity</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard	No known significant effects or critical hazards.
	PFDTD Calibrant	No known significant effects or critical hazards.
	Benzophenone in isooctane, 100 pg/ul	No known significant effects or critical hazards.
	OFN in Isooctane, 1 pg/ul	No known significant effects or critical hazards.
	GC/MS Checkout Sample, 10 ng/ul	No known significant effects or critical hazards.
<b>Mutagenicity</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard	No known significant effects or critical hazards.
	PFDTD Calibrant	No known significant effects or critical hazards.
	Benzophenone in isooctane, 100 pg/ul	No known significant effects or critical hazards.
	OFN in Isooctane, 1 pg/ul	No known significant effects or critical hazards.
	GC/MS Checkout Sample, 10 ng/ul	No known significant effects or critical hazards.
<b>Teratogenicity</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard	No known significant effects or critical hazards.
	PFDTD Calibrant	No known significant effects or critical hazards.
	Benzophenone in isooctane, 100 pg/ul	No known significant effects or critical hazards.
	OFN in Isooctane, 1 pg/ul	No known significant effects or critical hazards.
	GC/MS Checkout Sample, 10 ng/ul	No known significant effects or critical hazards.
<b>Developmental effects</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard	No known significant effects or critical hazards.
	PFDTD Calibrant	No known significant effects or critical hazards.
	Benzophenone in isooctane, 100 pg/ul	No known significant effects or critical hazards.
	OFN in Isooctane, 1 pg/ul	No known significant effects or critical hazards.
	GC/MS Checkout Sample, 10 ng/ul	No known significant effects or critical hazards.
<b>Fertility effects</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard	No known significant effects or critical hazards.
	PFDTD Calibrant	No known significant effects or critical hazards.
	Benzophenone in isooctane, 100 pg/ul	No known significant effects or critical hazards.
	OFN in Isooctane, 1 pg/ul	No known significant effects or critical hazards.
	GC/MS Checkout Sample, 10 ng/ul	No known significant effects or critical hazards.

## Section 11. Toxicological information

### Numerical measures of toxicity

#### Acute toxicity estimates

N/A

<b>Other information</b>	: Perfluorotributylamine -PFTBA- GC-MS Standard	Not available.
	PFDTD Calibrant	Not available.
	Benzophenone in isooctane, 100 pg/μl	Adverse symptoms may include the following: Repeated exposure may cause skin dryness or cracking.
	OFN in Isooctane, 1 pg/μl	Adverse symptoms may include the following: Repeated exposure may cause skin dryness or cracking.
	GC/MS Checkout Sample, 10 ng/ul	Adverse symptoms may include the following: Repeated exposure may cause skin dryness or cracking.

## Section 12. Ecological information

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
<b>Benzophenone in isooctane , 100 pg/μl</b> 2,2,4-trimethylpentane	Acute LC50 0.11 mg/l Fresh water	Fish	96 hours
<b>OFN in Isooctane, 1 pg/μl</b> 2,2,4-trimethylpentane	Acute LC50 0.11 mg/l Fresh water	Fish	96 hours
<b>GC/MS Checkout Sample, 10 ng/ul</b> 2,2,4-trimethylpentane	Acute LC50 0.11 mg/l Fresh water	Fish	96 hours

### 12.2 Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
<b>Perfluorotributylamine - PFTBA- GC-MS Standard</b> Tris(Perfluorobutyl)amine	-	-	Not readily

### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
<b>Benzophenone in isooctane , 100 pg/μl</b> Benzophenone in isooctane, 100 pg/μl	4.5	-	high
2,2,4-trimethylpentane	4.08	231	low
<b>OFN in Isooctane, 1 pg/μl</b> 2,2,4-trimethylpentane	4.08	231	low
<b>GC/MS Checkout Sample,</b>			



## Section 12. Ecological information

10 ng/ul 2,2,4-trimethylpentane	4.08	231	low
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### 12.4 Mobility in soil

Soil/water partition coefficient ( $K_{oc}$ ) : Not available.

12.5 Other adverse effects : No known significant effects or critical hazards.

## Section 13. Disposal considerations

### 13.1 Waste treatment methods

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

## Section 14. Transport information

DOT / TDG / Mexico / IMDG / IATA : Not regulated.

### Additional information

Remarks: De minimis quantities

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

## Section 15. Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

**U.S. Federal regulations** : TSCA 4(a) final test rules: Benzophenone  
 TSCA 6 final risk management: 4-Chlorobiphenyl  
 TSCA 8(a) PAIR: Tris(Perfluorobutyl)amine; PFDTD Calibrant; Biphenyl  
 TSCA 8(a) CDR Exempt/Partial exemption: Not determined  
 Clean Water Act (CWA) 307: 4-Chlorobiphenyl  
 Clean Water Act (CWA) 311: 4-Chlorobiphenyl

**Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** : Listed

**Clean Air Act Section 602 Class I Substances** : Not listed

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Not listed

#### SARA 302/304

##### Composition/information on ingredients

No products were found.

**SARA 304 RQ** : Not applicable.

#### SARA 311/312

##### **Classification**

Perfluorotributylamine -PFTBA- GC-MS Standard	SKIN IRRITATION - Category 2  EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 Not applicable.
PFDTD Calibrant	FLAMMABLE LIQUIDS - Category 2
Benzophenone in isooctane, 100 pg/μl	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
OFN in Isooctane, 1 pg/μl	ASPIRATION HAZARD - Category 1 FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
GC/MS Checkout Sample, 10 ng/ul	ASPIRATION HAZARD - Category 1 FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
	ASPIRATION HAZARD - Category 1

##### Composition/information on ingredients

## Section 15. Regulatory information

Name	%	Classification
<b>Perfluorotributylamine - PFTBA- GC-MS Standard</b> Tris(Perfluorobutyl)amine	100	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
<b>Benzophenone in isooctane, 100 pg/μl</b> 2,2,4-trimethylpentane	≥90	FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1 HNOC - Defatting irritant
<b>OFN in Isooctane, 1 pg/μl</b> 2,2,4-trimethylpentane	≥90	FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1 HNOC - Defatting irritant
<b>GC/MS Checkout Sample, 10 ng/ul</b> 2,2,4-trimethylpentane	≥90	FLAMMABLE LIQUIDS - Category 2 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1 HNOC - Defatting irritant

### SARA 313


	Product name	CAS number	%
<b>Form R - Reporting requirements</b>	<b>GC/MS Checkout Sample, 10 ng/ul</b> 4-Chlorobiphenyl	2051-62-9	<0.1

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

### State regulations

- Massachusetts** : The following components are listed: ISOOCTANE
- New York** : The following components are listed: 2,2,4-Trimethylpentane
- New Jersey** : The following components are listed: ISOOCTANE; 2,2,4-TRIMETHYLPENTANE
- Pennsylvania** : The following components are listed: PENTANE, 2,2,4-TRIMETHYL-

### California Prop. 65

 **WARNING:** This product can expose you to chemicals including Polychlorinated biphenyls, which is known to the State of California to cause cancer and birth defects or other reproductive harm. This product can expose you to chemicals including Benzophenone, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## Section 15. Regulatory information

Ingredient name	No significant risk level	Maximum acceptable dosage level
Benzophenone in isooctane, 100 pg/µl Benzophenone	-	-
GC/MS Checkout Sample, 10 ng/ul Polychlorinated biphenyls	Yes.	-

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

#### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

### Inventory list

<b>Australia</b>	: Not determined.
<b>Canada</b>	: Not determined.
<b>China</b>	: Not determined.
<b>Europe</b>	: Not determined.
<b>Japan</b>	: <b>Japan inventory (ENCS):</b> Not determined. <b>Japan inventory (ISHL):</b> Not determined.
<b>New Zealand</b>	: Not determined.
<b>Philippines</b>	: Not determined.
<b>Republic of Korea</b>	: Not determined.
<b>Taiwan</b>	: Not determined.
<b>Thailand</b>	: Not determined.
<b>Turkey</b>	: Not determined.
<b>United States</b>	: Not determined.
<b>Viet Nam</b>	: Not determined.

## Section 16. Other information

### History

<b>Date of issue</b>	: 09/30/2019
<b>Date of previous issue</b>	: 12/18/2017
<b>Version</b>	: 3

## Section 16. Other information

**Key to abbreviations** :

- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- N/A = Not available
- UN = United Nations

### Procedure used to derive the classification

Classification	Justification
<p><b>Perfluorotributylamine -PFTBA- GC-MS Standard</b></p> <p>SKIN IRRITATION - Category 2            EYE IRRITATION - Category 2A            SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3</p>	<p>Expert judgment            Expert judgment            Expert judgment</p>
<p><b>Benzophenone in isooctane, 100 pg/μl</b></p> <p>FLAMMABLE LIQUIDS - Category 2            SKIN IRRITATION - Category 2            EYE IRRITATION - Category 2A            SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3            SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3            ASPIRATION HAZARD - Category 1            AQUATIC HAZARD (ACUTE) - Category 1            AQUATIC HAZARD (LONG-TERM) - Category 1</p>	<p>On basis of test data            Calculation method            Calculation method            Calculation method            Calculation method            Expert judgment            Calculation method            Calculation method</p>
<p><b>OFN in Isooctane, 1 pg/μl</b></p> <p>FLAMMABLE LIQUIDS - Category 2            SKIN IRRITATION - Category 2            EYE IRRITATION - Category 2A            SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3            SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3            ASPIRATION HAZARD - Category 1            AQUATIC HAZARD (ACUTE) - Category 1            AQUATIC HAZARD (LONG-TERM) - Category 1</p>	<p>On basis of test data            Calculation method            Calculation method            Calculation method            Calculation method            Expert judgment            Calculation method            Calculation method</p>
<p><b>GC/MS Checkout Sample, 10 ng/ul</b></p> <p>FLAMMABLE LIQUIDS - Category 2            SKIN IRRITATION - Category 2            EYE IRRITATION - Category 2A            SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3            SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3            ASPIRATION HAZARD - Category 1            AQUATIC HAZARD (ACUTE) - Category 1            AQUATIC HAZARD (LONG-TERM) - Category 1</p>	<p>On basis of test data            Calculation method            Calculation method            Calculation method            Calculation method            Expert judgment            Calculation method            Calculation method</p>

Indicates information that has changed from previously issued version.

## Section 16. Other information

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