

# SAFETY DATA SHEET



## Clean Shot™

Version 3.7      Revision Date: 10/10/2020      SDS Number: 3142939-00010      Date of last issue: 07/08/2020  
Date of first issue: 09/11/2018

---

### SECTION 1. IDENTIFICATION

Product name : Clean Shot™  
Product code : D15440578  
SDS-Identcode : 130000145143

#### Manufacturer or supplier's details

Company name of supplier : The Chemours Company FC, LLC  
Address : 1007 Market Street  
Wilmington, DE 19801 United States of America (USA)  
Telephone : 1-844-773-CHEM (outside the U.S. 1-302-773-1000)  
Emergency telephone : Medical emergency: 1-866-595-1473 (outside the U.S. 1-302-773-2000) ; Transport emergency: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

#### Recommended use of the chemical and restrictions on use

Recommended use : Refrigerant

---

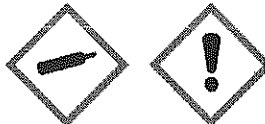
### SECTION 2. HAZARDS IDENTIFICATION

#### GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Gases under pressure : Liquefied gas  
Eye irritation : Category 2B  
Specific target organ toxicity - single exposure : Category 3

Simple Asphyxiant

#### GHS label elements

Hazard pictograms : 

Signal Word : Warning

Hazard Statements : H280 Contains gas under pressure; may explode if heated.  
H320 Causes eye irritation.  
H336 May cause drowsiness or dizziness.  
May displace oxygen and cause rapid suffocation.

Precautionary Statements : **Prevention:**

# SAFETY DATA SHEET



## Clean Shot™

Version 3.7      Revision Date: 10/10/2020      SDS Number: 3142939-00010      Date of last issue: 07/08/2020  
Date of first issue: 09/11/2018

P261 Avoid breathing gas.  
P264 Wash skin thoroughly after handling.  
P271 Use only outdoors or in a well-ventilated area.

### Response:

P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a doctor if you feel unwell.  
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.

### Storage:

P405 Store locked up.  
P410 + P403 Protect from sunlight. Store in a well-ventilated place.

### Disposal:

P501 Dispose of contents and container to an approved waste disposal plant.

### Other hazards

Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing. Misuse or intentional inhalation abuse may cause death without warning symptoms, due to cardiac effects.  
Rapid evaporation of the product may cause frostbite.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

### Components

Chemical name	CAS-No.	Concentration (% w/w)
Trans-Dichloroethylene	156-60-5	>= 50 - < 70
1,1,1,2-Tetrafluoroethane#	811-97-2	>= 10 - < 20

# Voluntarily-disclosed non-hazardous substance  
Actual concentration is withheld as a trade secret

## SECTION 4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.  
When symptoms persist or in all cases of doubt seek medical advice.

If inhaled : If inhaled, remove to fresh air.  
Get medical attention if symptoms occur.

In case of skin contact : Thaw frosted parts with lukewarm water. Do not rub affected area.  
In case of contact, immediately flush skin with plenty of water.  
Remove contaminated clothing and shoes.

# SAFETY DATA SHEET



## Clean Shot™

Version 3.7      Revision Date: 10/10/2020      SDS Number: 3142939-00010      Date of last issue: 07/08/2020  
Date of first issue: 09/11/2018

- Get medical attention immediately.  
Wash clothing before reuse.  
Thoroughly clean shoes before reuse.
- In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.  
If easy to do, remove contact lens, if worn.  
Get medical attention immediately.
- If swallowed : Ingestion is not considered a potential route of exposure.
- Most important symptoms and effects, both acute and delayed : May cause cardiac arrhythmia.  
Causes eye irritation.  
May cause drowsiness or dizziness.  
Contact with liquid or refrigerated gas can cause cold burns and frostbite.
- Protection of first-aiders : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).
- Notes to physician : Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, that may be used in situations of emergency life support should be used with special caution.

### SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Not applicable  
Will not burn
- Unsuitable extinguishing media : Not applicable  
Will not burn
- Specific hazards during fire fighting : Exposure to combustion products may be a hazard to health.  
If the temperature rises there is danger of the vessels bursting due to the high vapor pressure.
- Hazardous combustion products : Carbon oxides  
Chlorine compounds  
Hydrogen fluoride  
carbonyl fluoride  
Fluorine compounds
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Fight fire remotely due to the risk of explosion.  
Use water spray to cool unopened containers.  
Remove undamaged containers from fire area if it is safe to do so.  
Evacuate area.
- Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.

# SAFETY DATA SHEET



## Clean Shot™

Version 3.7      Revision Date: 10/10/2020      SDS Number: 3142939-00010      Date of last issue: 07/08/2020  
Date of first issue: 09/11/2018

---

### SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Evacuate personnel to safe areas.  
Stop gas leak if it is safe to do so.  
Avoid skin contact with leaking liquid (danger of frostbite).  
Ventilate the area.  
Use personal protective equipment.  
Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).
- Environmental precautions : Avoid release to the environment.  
Prevent further leakage or spillage if safe to do so.  
Retain and dispose of contaminated wash water.
- Methods and materials for containment and cleaning up : Ventilate the area.  
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.  
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.
- 

### SECTION 7. HANDLING AND STORAGE

- Technical measures : Use equipment rated for cylinder pressure. Use a backflow preventative device in piping. Close valve after each use and when empty.
- Local/Total ventilation : If sufficient ventilation is unavailable, use with local exhaust ventilation.
- Advice on safe handling : Do not get on skin or clothing.  
Avoid breathing gas.  
Do not swallow.  
Do not get in eyes.  
Wash skin thoroughly after handling.  
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment  
Wear cold insulating gloves/ face shield/ eye protection.  
Valve protection caps and valve outlet threaded plugs must remain in place unless container is secured with valve outlet piped to use point.  
Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder.  
Prevent backflow into the gas tank.  
Use a pressure reducing regulator when connecting cylinder to lower pressure (<3000 psig) piping or systems.  
Close valve after each use and when empty. Do NOT change or force fit connections.  
Prevent the intrusion of water into the gas tank.  
Never attempt to lift cylinder by its cap.  
Do not drag, slide or roll cylinders.  
Use a suitable hand truck for cylinder movement.
-

# SAFETY DATA SHEET



## Clean Shot™

Version 3.7      Revision Date: 10/10/2020      SDS Number: 3142939-00010      Date of last issue: 07/08/2020  
Date of first issue: 09/11/2018

Keep away from heat and sources of ignition.  
Take precautionary measures against static discharges.  
Take care to prevent spills, waste and minimize release to the environment.

**Conditions for safe storage** : Cylinders should be stored upright and firmly secured to prevent falling or being knocked over.  
Separate full containers from empty containers.  
Do not store near combustible materials.  
Avoid area where salt or other corrosive materials are present.  
Keep in properly labeled containers.  
Store locked up.  
Keep in a cool, well-ventilated place.  
Keep away from direct sunlight.  
Store in accordance with the particular national regulations.

**Materials to avoid** : Do not store with the following product types:  
Self-reactive substances and mixtures  
Organic peroxides  
Oxidizing agents  
Flammable liquids  
Flammable solids  
Pyrophoric liquids  
Pyrophoric solids  
Self-heating substances and mixtures  
Substances and mixtures which in contact with water emit flammable gases  
Explosives  
Acutely toxic substances and mixtures  
Substances and mixtures with chronic toxicity

**Recommended storage temperature** : -0.40 - 122 °F / -18 - 50 °C

**Further information on storage stability** : Keep container tightly closed in a dry and well-ventilated place.

Stable under recommended storage conditions.

Keep away from direct sunlight.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Trans-Dichloroethylene	156-60-5	TWA	200 ppm	ACGIH
1,1,1,2-Tetrafluoroethane	811-97-2	TWA	1,000 ppm	US WEEL

**Engineering measures** : Minimize workplace exposure concentrations.  
If sufficient ventilation is unavailable, use with local exhaust ventilation.

# SAFETY DATA SHEET



## Clean Shot™

Version 3.7      Revision Date: 10/10/2020      SDS Number: 3142939-00010      Date of last issue: 07/08/2020  
Date of first issue: 09/11/2018

---

### Personal protective equipment

- Respiratory protection** : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.
- Hand protection**
- Material** : Chemical-resistant gloves
- Remarks** : Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Take note that the product is extremely cold, which may impact the selection of hand protection. Wash hands before breaks and at the end of workday.
- Eye protection** : Wear the following personal protective equipment:  
Chemical resistant goggles must be worn.  
Face-shield
- Skin and body protection** : Skin should be washed after contact.
- Protective measures** : Wear cold insulating gloves/ face shield/ eye protection.
- Hygiene measures** : If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place.  
When using do not eat, drink or smoke.  
Wash contaminated clothing before re-use.

---

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance** : Liquefied gas
- Color** : colorless
- Odor** : slight, ether-like

# SAFETY DATA SHEET



## Clean Shot™

Version	Revision Date:	SDS Number:	Date of last issue: 07/08/2020
3.7	10/10/2020	3142939-00010	Date of first issue: 09/11/2018

---

Odor Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	99.0 °F / 37.2 °C
Flash point	:	does not flash
Evaporation rate	:	Not applicable
Flammability (solid, gas)	:	Will not burn
Upper explosion limit / Upper flammability limit	:	Upper flammability limit 9 %(V)
Lower explosion limit / Lower flammability limit	:	Lower flammability limit 7.5 %(V)
Vapor pressure	:	827.37 hPa (66 °F / 19 °C)
Relative vapor density	:	No data available
Relative density	:	No data available
Solubility(ies) Water solubility	:	slightly soluble
Partition coefficient: n-octanol/water	:	Not applicable
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity Viscosity, kinematic	:	Not applicable
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Particle size	:	Not applicable

---

### SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable if used as directed. Follow precautionary advice and

# SAFETY DATA SHEET



## Clean Shot™

Version 3.7      Revision Date: 10/10/2020      SDS Number: 3142939-00010      Date of last issue: 07/08/2020  
Date of first issue: 09/11/2018

---

avoid incompatible materials and conditions.

Possibility of hazardous reactions : Can react with strong oxidizing agents.

Conditions to avoid : This substance is not flammable in air at temperatures up to 100 °C (212 °F) at atmospheric pressure. However, mixtures of this substance with high concentrations of air at elevated pressure and/or temperature can become combustible in the presence of an ignition source. This substance can also become combustible in an oxygen enriched environment (oxygen concentrations greater than that in air). Whether a mixture containing this substance and air, or this substance in an oxygen enriched atmosphere become combustible depends on the inter-relationship of 1) the temperature 2) the pressure, and 3) the proportion of oxygen in the mixture. In general, this substance should not be allowed to exist with air above atmospheric pressure or at high temperatures; or in an oxygen enriched environment. For example this substance should NOT be mixed with air under pressure for leak testing or other purposes.  
Heat, flames and sparks.

Incompatible materials : Oxidizing agents

Hazardous decomposition products : No hazardous decomposition products are known.

---

### SECTION 11. TOXICOLOGICAL INFORMATION

#### Information on likely routes of exposure

Inhalation  
Skin contact  
Eye contact

#### Acute toxicity

Not classified based on available information.

#### Components:

##### **Trans-Dichloroethylene:**

Acute oral toxicity : LD50 (Rat): 7,902 mg/kg  
Method: OECD Test Guideline 420

Acute inhalation toxicity : LC50 (Rat): 95.5 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor  
Method: OECD Test Guideline 403

Lowest observed adverse effect concentration (Dog): 250000 ppm  
Test atmosphere: gas

Cardiac sensitisation threshold limit (Dog): 991,309 mg/m<sup>3</sup>  
Test atmosphere: gas



# SAFETY DATA SHEET



## Clean Shot™

Version 3.7      Revision Date: 10/10/2020      SDS Number: 3142939-00010      Date of last issue: 07/08/2020  
Date of first issue: 09/11/2018

---

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg  
Method: OECD Test Guideline 402

### 1,1,1,2-Tetrafluoroethane:

Acute oral toxicity : Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 567000 ppm  
Exposure time: 4 h  
Test atmosphere: gas  
Method: OECD Test Guideline 403

No observed adverse effect concentration (Dog): 40000 ppm  
Test atmosphere: gas  
Remarks: Cardiac sensitization

Lowest observed adverse effect concentration (Dog): 80000 ppm  
Test atmosphere: gas  
Symptoms: May cause cardiac arrhythmia.

Cardiac sensitisation threshold limit (Dog): 334,000 mg/m<sup>3</sup>  
Test atmosphere: gas  
Symptoms: May cause cardiac arrhythmia.

Acute dermal toxicity : Assessment: The substance or mixture has no acute dermal toxicity

### Skin corrosion/irritation

Not classified based on available information.

### Components:

#### Trans-Dichloroethylene:

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : Mild skin irritation

#### 1,1,1,2-Tetrafluoroethane:

Result : No skin irritation

### Serious eye damage/eye irritation

Causes eye irritation.

### Components:

#### Trans-Dichloroethylene:

Species : Rabbit  
Result : Irritation to eyes, reversing within 7 days  
Method : OECD Test Guideline 405

# SAFETY DATA SHEET



## Clean Shot™

Version 3.7      Revision Date: 10/10/2020      SDS Number: 3142939-00010      Date of last issue: 07/08/2020  
Date of first issue: 09/11/2018

---

### 1,1,1,2-Tetrafluoroethane:

Result : No eye irritation

### Respiratory or skin sensitization

#### Skin sensitization

Not classified based on available information.

#### Respiratory sensitization

Not classified based on available information.

### Components:

#### 1,1,1,2-Tetrafluoroethane:

Routes of exposure : Skin contact  
Result : negative

Routes of exposure : Inhalation  
Species : Rat  
Result : negative

Routes of exposure : Inhalation  
Species : Humans  
Result : negative

### Germ cell mutagenicity

Not classified based on available information.

### Components:

#### Trans-Dichloroethylene:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative

Test Type: In vitro mammalian cell gene mutation test  
Method: OECD Test Guideline 476  
Result: negative

Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Mouse  
Application Route: Ingestion  
Method: OECD Test Guideline 474  
Result: negative

Germ cell mutagenicity - Assessment : Weight of evidence does not support classification as a germ cell mutagen.

#### 1,1,1,2-Tetrafluoroethane:

# SAFETY DATA SHEET



## Clean Shot™

Version 3.7      Revision Date: 10/10/2020      SDS Number: 3142939-00010      Date of last issue: 07/08/2020  
Date of first issue: 09/11/2018

---

- Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative
- Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: negative
- Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Mouse  
Application Route: inhalation (gas)  
Method: OECD Test Guideline 474  
Result: negative
- Test Type: Unscheduled DNA synthesis (UDS) test with mammalian liver cells in vivo  
Species: Rat  
Application Route: inhalation (gas)  
Method: OECD Test Guideline 486  
Result: negative
- Germ cell mutagenicity - Assessment : Weight of evidence does not support classification as a germ cell mutagen.

### Carcinogenicity

Not classified based on available information.

### Components:

#### **1,1,1,2-Tetrafluoroethane:**

- Species : Rat  
Application Route : inhalation (gas)  
Exposure time : 2 Years  
Method : OECD Test Guideline 453  
Result : negative

Carcinogenicity - Assessment : Weight of evidence does not support classification as a carcinogen

**IARC** No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA** No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**NTP** No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

### Reproductive toxicity

Not classified based on available information.

### Components:

#### **Trans-Dichloroethylene:**

# SAFETY DATA SHEET



## Clean Shot™

Version 3.7      Revision Date: 10/10/2020      SDS Number: 3142939-00010      Date of last issue: 07/08/2020  
Date of first issue: 09/11/2018

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat  
Application Route: Inhalation  
Method: OECD Test Guideline 414  
Result: negative

### 1,1,1,2-Tetrafluoroethane:

Effects on fertility : Species: Mouse  
Application Route: Inhalation  
Result: negative

Effects on fetal development : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test  
Species: Rabbit  
Application Route: inhalation (gas)  
Method: OECD Test Guideline 414  
Result: negative

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

### STOT-single exposure

May cause drowsiness or dizziness.

#### Components:

##### Trans-Dichloroethylene:

Assessment : May cause drowsiness or dizziness.

##### 1,1,1,2-Tetrafluoroethane:

Routes of exposure : inhalation (gas)  
Assessment : No significant health effects observed in animals at concentrations of 20000 ppmV/4h or less

### STOT-repeated exposure

Not classified based on available information.

#### Components:

##### Trans-Dichloroethylene:

Routes of exposure : Inhalation  
Assessment : No significant health effects observed in animals at concentrations of 250 ppmV/6h/d or less.

Routes of exposure : Ingestion  
Assessment : No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

##### 1,1,1,2-Tetrafluoroethane:

Routes of exposure : inhalation (gas)  
Assessment : No significant health effects observed in animals at concentrations of 250 ppmV/6h/d or less.

# SAFETY DATA SHEET



## Clean Shot™

Version 3.7      Revision Date: 10/10/2020      SDS Number: 3142939-00010      Date of last issue: 07/08/2020  
Date of first issue: 09/11/2018

---

### Repeated dose toxicity

#### Components:

##### **Trans-Dichloroethylene:**

Species : Rat, male and female  
NOAEL : 4000 ppm  
LOAEL : > 4000 ppm  
Application Route : Inhalation  
Exposure time : 90 Days  
Method : OECD Test Guideline 413

Species : Rat, male and female  
NOAEL : 3,210 mg/kg  
LOAEL : > 3,210 mg/kg  
Application Route : Ingestion  
Exposure time : 98 Days  
Method : OECD Test Guideline 408

##### **1,1,1,2-Tetrafluoroethane:**

Species : Rat, male and female  
NOAEL : 50000 ppm  
LOAEL : >50000 ppm  
Application Route : inhalation (gas)  
Exposure time : 2 y  
Method : OECD Test Guideline 453

### Aspiration toxicity

Not classified based on available information.

#### Components:

##### **1,1,1,2-Tetrafluoroethane:**

No aspiration toxicity classification

---

## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Components:

##### **Trans-Dichloroethylene:**

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 135 mg/l  
Exposure time: 96 h  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 220 mg/l  
Exposure time: 48 h  
Method: EPA-660/3-75-009

Toxicity to algae/aquatic : EbC50 (Pseudokirchneriella subcapitata (green algae)): 36.36

# SAFETY DATA SHEET



## Clean Shot™

Version 3.7      Revision Date: 10/10/2020      SDS Number: 3142939-00010      Date of last issue: 07/08/2020  
Date of first issue: 09/11/2018

---

plants      mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 201

### **1,1,1,2-Tetrafluoroethane:**

Toxicity to fish      :    LC50 (Oncorhynchus mykiss (rainbow trout)): 450 mg/l  
Exposure time: 96 h  
Method: Regulation (EC) No. 440/2008, Annex, C.1

Toxicity to daphnia and other      :    EC50 (Daphnia magna (Water flea)): 980 mg/l  
aquatic invertebrates      Exposure time: 48 h  
Method: Regulation (EC) No. 440/2008, Annex, C.2

Toxicity to algae/aquatic      :    ErC50 (green algae): > 100 mg/l  
plants      Exposure time: 96 h  
Remarks: Based on data from similar materials

### **Persistence and degradability**

#### **Components:**

#### **Trans-Dichloroethylene:**

Biodegradability      :    Result: not rapidly degradable  
Method: OECD Test Guideline 301D

#### **1,1,1,2-Tetrafluoroethane:**

Biodegradability      :    Result: Not readily biodegradable.  
Method: OECD Test Guideline 301D

### **Bioaccumulative potential**

#### **Components:**

#### **Trans-Dichloroethylene:**

Partition coefficient: n-      :    log Pow: 2.06  
octanol/water

#### **1,1,1,2-Tetrafluoroethane:**

Bioaccumulation      :    Remarks: Bioaccumulation is unlikely.

Partition coefficient: n-      :    log Pow: 1.06  
octanol/water

### **Mobility in soil**

No data available

### **Other adverse effects**

No data available

# SAFETY DATA SHEET



## Clean Shot™

Version 3.7      Revision Date: 10/10/2020      SDS Number: 3142939-00010      Date of last issue: 07/08/2020  
Date of first issue: 09/11/2018

### SECTION 13. DISPOSAL CONSIDERATIONS

#### Disposal methods

- Waste from residues : Dispose of in accordance with local regulations.
- Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.  
Empty pressure vessels should be returned to the supplier.  
If not otherwise specified: Dispose of as unused product.

### SECTION 14. TRANSPORT INFORMATION

#### International Regulations

##### UNRTDG

- UN number : UN 3159  
Proper shipping name : 1,1,1,2-TETRAFLUOROETHANE  
Class : 2.2  
Packing group : Not assigned by regulation  
Labels : 2.2

##### IATA-DGR

- UN/ID No. : UN 3159  
Proper shipping name : 1,1,1,2-Tetrafluoroethane  
Class : 2.2  
Packing group : Not assigned by regulation  
Labels : Non-flammable, non-toxic Gas  
Packing instruction (cargo aircraft) : 200  
Packing instruction (passenger aircraft) : 200

##### IMDG-Code

- UN number : UN 3159  
Proper shipping name : 1,1,1,2-TETRAFLUOROETHANE  
Class : 2.2  
Packing group : Not assigned by regulation  
Labels : 2.2  
EmS Code : F-C, S-V  
Marine pollutant : no

#### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

#### Domestic regulation

##### 49 CFR

- UN/ID/NA number : UN 3159  
Proper shipping name : 1,1,1,2-Tetrafluoroethane  
Class : 2.2  
Packing group : Not assigned by regulation  
Labels : NON-FLAMMABLE GAS  
ERG Code : 126

# SAFETY DATA SHEET



## Clean Shot™

Version 3.7      Revision Date: 10/10/2020      SDS Number: 3142939-00010      Date of last issue: 07/08/2020  
Date of first issue: 09/11/2018

Marine pollutant : no

### Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

## SECTION 15. REGULATORY INFORMATION

### CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Trans-Dichloroethylene	156-60-5	1000	1572

### SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

### SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : Gases under pressure  
Simple Asphyxiant  
Serious eye damage or eye irritation  
Specific target organ toxicity (single or repeated exposure)

**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### US State Regulations

#### Pennsylvania Right To Know

Trans-Dichloroethylene	156-60-5
1,1,1,2-Tetrafluoroethane	811-97-2
1,1,1,3,3-Pentafluorobutane	406-58-6
Methyl nonafluoroisobutyl ether	163702-08-7

#### California List of Hazardous Substances

Trans-Dichloroethylene	156-60-5
Methyl nonafluoroisobutyl ether	163702-08-7

### International Regulations

Montreal Protocol : 1,1,1,2-Tetrafluoroethane  
1,1,1,3,3-Pentafluorobutane

## SECTION 16. OTHER INFORMATION

### Further information



# SAFETY DATA SHEET



## Clean Shot™

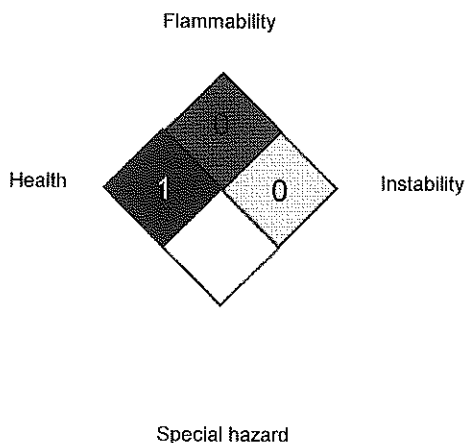
Version  
3.7

Revision Date:  
10/10/2020

SDS Number:  
3142939-00010

Date of last issue: 07/08/2020  
Date of first issue: 09/11/2018

### NFPA 704:



### HMIS® IV:

HEALTH	/	1
FLAMMABILITY		0
PHYSICAL HAZARD		3

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "/" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Chemours™ and the Chemours Logo are trademarks of The Chemours Company. Before use read Chemours safety information. For further information contact the local Chemours office or nominated distributors.

### Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
US WEEL	:	USA. Workplace Environmental Exposure Levels (WEEL)
ACGIH / TWA	:	8-hour, time-weighted average
US WEEL / TWA	:	8-hr TWA

AIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative)

# SAFETY DATA SHEET



## Clean Shot™

Version	Revision Date:	SDS Number:	Date of last issue: 07/08/2020
3.7	10/10/2020	3142939-00010	Date of first issue: 09/11/2018

---

tative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Material Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

Revision Date : 10/10/2020

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

US / Z8