**Section 1 - IDENTIFICATION**

**Material Name**
NICKEL CARBONYL

**Synonyms**
MTG MSDS 128; NICKEL TETRACARBONYL; NICKEL SPONGE; CARBONYL NICKEL POWDER; TETRACARBONYL NICKEL; UN 1259; C4NiO4

**Chemical Family**
carbonyls

**Product Use**
Industrial and Specialty Gas Applications.

**Restrictions on Use**
None known.

**Details of the supplier of the safety data sheet**
Electronic Fluorocarbons
3266 Bergey Road
Hatfield PA 19440

1-800-535-5053 (Emergency Telephone Number)
1-352-323-3500 (Outside the US - Call Collect)

**Section 2 - HAZARDS IDENTIFICATION**

Classification in accordance with paragraph (d) of 29 CFR 1910.1200. Flammable Liquids - Category 2
Acute Toxicity - Inhalation - Dust/Mist - Category 1
Acute Toxicity - Inhalation - Vapor - Category 1
Skin Corrosion/Irritation - Category 2
Severe Eye Damage/Eye Irritation - Category 1
Respiratory Sensitization - Category 1
Skin Sensitization - Category 1
Carcinogenicity - Category 1A
Reproductive Toxicity - Category 1B
Specific target organ toxicity - Single exposure - Category 1
Hazardous to the Aquatic Environment - Acute - Category 1
Hazardous to the Aquatic Environment - Chronic - Category 1

**GHS Label Elements**

**Symbol(s)**

**Signal Word**
Danger

**Hazard Statement(s)**
Highly flammable liquid and vapour. Fatal if inhaled.
Material Name: Nickel Carbonyl

Causes skin irritation.
Causes serious eye damage.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
May cause cancer.
May damage fertility or the unborn child.
Causes damage to organs. (adrenal gland, central nervous system, heart, kidneys, liver, pancreas, respiratory system, spleen)
Very toxic to aquatic life.

Precautionary Statement(s)

Prevention
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Keep container tightly closed.
Ground/Bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves and eye/face protection.
Do not breathe vapor or mist.
Use only outdoors or in a well-ventilated area.
Wear respiratory protection.
Wash thoroughly after handling.
Contaminated work clothing should not be allowed out of the workplace.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Use Personal Protective equipment as required.
Do not eat, drink or smoke when using this product.
Avoid release to the environment.

Response
In case of fire.
Use appropriate media for extinction.
IF exposed or concerned: Get medical advice/attention.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Immediately call a POISON CENTER or doctor/physician.
Specific treatment is urgent, see first aid section of Safety Data Sheet.
If experiencing respiratory symptoms call a POISON CENTER or doctor/physician.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash with plenty of water.
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor/physician.
Collect spillage.

Storage
Store in a well-ventilated place.
Keep cool.
Keep container tightly closed.
Store locked up.

Disposal
Dispose in accordance with all applicable regulations.

Statement(s) of Unknown Acute Toxicity
0% of the mixture consists of ingredient(s) of unknown acute toxicity.

Other Hazards
No information available.
**Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS**

<table>
<thead>
<tr>
<th>CAS</th>
<th>Component Name</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>13463-39-3</td>
<td>NICKEL CARBONYL</td>
<td>100</td>
</tr>
</tbody>
</table>

**Section 4 - FIRST AID MEASURES**

**Inhalation**
If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

**Skin**
Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

**Eyes**
Immediately flush eyes with plenty of water for at least 60 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Then get immediate medical attention.

**Ingestion**
If swallowed, get medical attention.

**Most Important Symptoms/Effects**

**Acute**
allergic reactions, eye burns, skin irritation, adrenal gland effects, central nervous system damage, pancreas damage, heart damage, kidney damage, liver damage, respiratory system damage, spleen damage

**Delayed**
allergic reactions, Reproductive Effects, cancer

**Note to Physicians**
For inhalation, consider oxygen.

**Section 5 - FIRE FIGHTING MEASURES**

**Extinguishing Media**

**Suitable Extinguishing Media**
regular dry chemical, carbon dioxide, water spray, alcohol-resistant foam, Large fires: water spray or fog, alcohol-resistant foam

**Unsuitable Extinguishing Media**
Do not scatter spilled material with high-pressure water streams.

**Special Hazards Arising from the Chemical**
Severe fire hazard. Severe explosion hazard. Vapor/air mixtures are explosive. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back.

**Hazardous Combustion Products**
Oxides of carbon, oxides of nickel

**Fire Fighting Measures**
Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. Do not scatter spilled material with high-pressure water streams. Flood with fine water spray. Stay away from the ends of tanks. Dike for later disposal.
Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile). Do not attempt to extinguish fire unless flow of material can be stopped first. Apply water from a protected location or from a safe distance. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

**Special Protective Equipment and Precautions for Firefighters**
Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

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**Section 6 - ACCIDENTAL RELEASE MEASURES**

**Personal Precautions, Protective Equipment and Emergency Procedures**
Wear personal protective clothing and equipment, see Section 8.

**Methods and Materials for Containment and Cleaning Up**
Avoid heat, flames, sparks and other sources of ignition. Remove sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Vapor-suppressing foam may be used to control vapors. Prevent entry into waterways, sewers, basements, or confined areas. Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Dike for later disposal. Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

**Environmental Precautions**
Avoid release to the environment. Collect spillage.

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**Section 7 - HANDLING AND STORAGE**

**Precautions for Safe Handling**
Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharges. Wear protective gloves/eye protection/face protection. Do not breathe vapor or mist. Use only outdoors or in a well-ventilated area. Wear respiratory protection. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use Personal Protective equipment as required. Do not eat, drink, or smoke when using this product. Subject to handling regulations: U.S. OSHA 29 CFR 1910.119.

**Conditions for Safe Storage, Including any Incompatibilities**
Store in a well-ventilated place.
Keep cool.
Keep container tightly closed.
Store locked up.

**Incompatible Materials**
halogenes, oxidizing materials, halo carbons, combustible materials
**Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Component Exposure Limits**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>NICKEL CARBONYL</td>
<td>13463-39-3</td>
</tr>
</tbody>
</table>

- **ACGIH**: 0.05 ppm Ceiling as Ni
- **NIOSH**: 0.001 ppm TWA; 0.007 mg/m³ TWA
- **OSHA (US)**: 0.001 ppm TWA as Ni; 0.007 mg/m³ TWA as Ni
- **Mexico**: 0.05 ppm TWA VLE-PPT as Ni; 0.35 mg/m³ TWA VLE-PPT as Ni

**EU - Occupational Exposure (98/24/EC) - Binding Biological Limit Values and Health Surveillance Measures**

There are no biological limit values for any of this product's components.

**ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)**

There are no biological limit values for any of this product's components.

**Engineering Controls**

Provide local exhaust or process enclosure ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

**Individual Protection Measures, such as Personal Protective Equipment**

**Eye/face protection**

Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

**Skin Protection**

Wear appropriate chemical resistant clothing.

**Respiratory Protection**

The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA. At any detectable concentration -. Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode. Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode. Escape -. Any air-purifying full-facepiece respirator (gas mask) with a chin-style, front-mounted or back-mounted canister providing protection against the compound of concern. Any appropriate escape-type, self-contained breathing apparatus. Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode. Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

**Glove Recommendations**

Wear appropriate chemical resistant gloves.

**Section 9 - Physical and Chemical Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td>Colorless liquid</td>
</tr>
<tr>
<td><strong>Odor</strong></td>
<td>Damp, moldy odor</td>
</tr>
<tr>
<td><strong>Odor Threshold</strong></td>
<td>1 - 3 ppm</td>
</tr>
<tr>
<td><strong>Physical State</strong></td>
<td>Liquid</td>
</tr>
<tr>
<td><strong>Color</strong></td>
<td>Colorless</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>Not available</td>
</tr>
<tr>
<td>Melting Point</td>
<td>-25 °C (-13 °F)</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>43 °C (109 °F)</td>
</tr>
<tr>
<td>Boiling Point Range</td>
<td>Not available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not available</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>&lt;93.33 °C (&lt;200 °F Vapor)</td>
</tr>
<tr>
<td>Flash Point</td>
<td>&lt;24 °C Closed Cup (&lt;-11 °F)</td>
</tr>
<tr>
<td>Lower Explosive Limit</td>
<td>2 %</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Upper Explosive Limit</td>
<td>34 %</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>400 mmHg @ 26 °C</td>
</tr>
<tr>
<td>Vapor Density (air=1)</td>
<td>5.98</td>
</tr>
<tr>
<td>Specific Gravity (water=1)</td>
<td>1.3 at 17 °C</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>0.018 % (@ 10 °C )</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available</td>
</tr>
<tr>
<td>Solubility (Other)</td>
<td>Not available</td>
</tr>
<tr>
<td>Bioconcentration Factor (BCF)</td>
<td>32.43</td>
</tr>
<tr>
<td>Density</td>
<td>Not available</td>
</tr>
<tr>
<td>Physical Form</td>
<td>volatile liquid</td>
</tr>
<tr>
<td>Molecular Formula</td>
<td>C4-Ni-O4</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>170.75</td>
</tr>
<tr>
<td>OSHA Flammability Class</td>
<td>IB</td>
</tr>
</tbody>
</table>

**Solvent Solubility**

- **Soluble**
  - alcohol, Benzene, chloroform, acetone, ethanol, carbon tetrachloride, nitric acid
- **Insoluble**
  - dilute acids, dilute alkali

**Section 10 - STABILITY AND REACTIVITY**

**Chemical Stability**

Finely divided material may explode spontaneously. May decompose on contact with air. May decompose violently on heating.

**Possibility of Hazardous Reactions**

Will not polymerize.

**Conditions to Avoid**

Avoid heat, flames, sparks and other sources of ignition. Minimize contact with material. Avoid inhalation of material or combustion by-products. Keep out of water supplies and sewers.

**Incompatible Materials**

- halogens, oxidizing materials, halo carbons, combustible materials

**Hazardous decomposition products**

- Oxides of carbon, oxides of nickel

**Acids**

- Oxides of carbon
**Section 11 - TOXICOLOGICAL INFORMATION**

**Information on Likely Routes of Exposure**

**Inhalation**
cough, fever, nausea, vomiting, diarrhea, chest pain, difficulty breathing, irregular heartbeat, headache, dizziness, Disorientation, bluish skin color, blood disorders, liver enlargement, convulsions, death,

Reproductive Effects, cancer

**Skin Contact**
irritation, allergic reactions, rash, itching

**Eye Contact**
burns

**Ingestion**
fever, nausea, vomiting, difficulty breathing, irregular heartbeat, headache, dizziness, bluish skin color

**Acute and Chronic Toxicity**

**Component Analysis - LD50/LC50**
The components of this material have been reviewed in various sources and the following selected endpoints are published:

**NICKEL CARBONYL (13463-39-3)**
Inhalation LC50 Rat 35 ppm 30 min

**Product Toxicity Data**

**Acute Toxicity Estimate**

| Inhalation - Vapor | 0.0864 mg/L |

**Immediate Effects**
allergic reactions, eye burns, skin irritation, adrenal gland effects, central nervous system damage, pancreas damage, heart damage, kidney damage, liver damage, respiratory system damage, spleen damage

**Delayed Effects**
allergic reactions, Reproductive Effects, cancer

**Irritation/Corrosivity Data**
eye burns, skin irritation

**Respiratory Sensitization**
Yes

**Dermal Sensitization**
Yes

**Component Carcinogenicity**

<table>
<thead>
<tr>
<th>Component</th>
<th>Carcinogenicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel Carbonyl</td>
<td>13463-39-3</td>
</tr>
<tr>
<td>ACGIH:</td>
<td>A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans</td>
</tr>
<tr>
<td>IARC:</td>
<td>Monograph 49 [1990] (Group 1 (carcinogenic to humans))</td>
</tr>
<tr>
<td>NTP:</td>
<td>Known Human Carcinogen (related to Nickel compounds)</td>
</tr>
<tr>
<td>DFG:</td>
<td>Category 1 (causes cancer in man) (related to Nickel compounds)</td>
</tr>
<tr>
<td>OSHA:</td>
<td>Present</td>
</tr>
<tr>
<td>NIOSH:</td>
<td>potential occupational carcinogen</td>
</tr>
</tbody>
</table>
Germ Cell Mutagenicity
No data available.

Tumorigenic Data
No data available

Reproductive Toxicity
Available data characterizes components of this product as reproductive hazards.

Specific Target Organ Toxicity - Single Exposure
adrenal gland, central nervous system, heart, kidneys, liver, pancreas,
Respiratory system, spleen

Specific Target Organ Toxicity - Repeated Exposure
No data available.

Aspiration hazard
No data available.

Medical Conditions Aggravated by Exposure
immune system disorders or allergies, respiratory disorders, skin disorders and
allergies

Additional Data
May cross the placenta. May be excreted in breast milk.

** Section 12 - ECOLOGICAL INFORMATION **

Ecotoxicity
Very toxic to aquatic life. There is no data for the substance itself, however, it has been classified a
Category 1 to the aquatic environment by EU.

Component Analysis - Aquatic Toxicity
No LOLI ecotoxicity data are available for this product's components

Persistence and Degradability
No data available.

Bioaccumulative Potential
No data available.

Mobility
No data available.

** Section 13 - DISPOSAL CONSIDERATIONS **

Disposal Methods
Dispose in accordance with all applicable
regulations.

Component Waste Numbers

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>Minimum Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>NICKEL CARBONYL</td>
<td>13463-39-3</td>
<td>DOT regulated severe marine pollutant</td>
</tr>
</tbody>
</table>

** Section 14 - Transport Information **

Component Marine Pollutants
This material contains one or more of the following chemicals required by US DOT to be identified
as marine pollutants

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>Minimum Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>NICKEL CARBONYL</td>
<td>13463-39-3</td>
<td>DOT regulated severe marine pollutant</td>
</tr>
</tbody>
</table>
**Section 15 - REGULATORY INFORMATION**

**U.S. Federal Regulations**
This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>CA</th>
<th>MA</th>
<th>MN</th>
<th>NJ</th>
<th>PA</th>
</tr>
</thead>
<tbody>
<tr>
<td>NICKEL CARBONYL</td>
<td>13463-39-3</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

SARA Section 311/312 (40 CFR 370 Subparts B and C) 2016 reporting categories
Acute Health: Yes Chronic Health: Yes Fire: Yes Pressure: No Reactivity: Yes

SARA Section 311/312 (40 CFR 370 Subparts B and C) 2017 reporting categories
Flammable; Carcinogenicity; Acute toxicity; Reproductive Toxicity; Skin Corrosion/Irritation; Respiratory/Skin Sensitization; Serious Eye Damage/Eye Irritation; Specific Target Organ Toxicity

**U.S. State Regulations**
The following components appear on one or more of the following state hazardous substances lists:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>NICKEL CARBONYL</td>
<td>13463-39-3</td>
</tr>
</tbody>
</table>

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):
WARNING! This product contains a chemical known to the state of California to cause cancer
WARNING! This product contains a chemical known to the state of California to cause reproductive/developmental effects

<table>
<thead>
<tr>
<th>Component</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NICKEL CARBONYL</td>
<td>13463-39-3</td>
</tr>
</tbody>
</table>

Carc: carcinogen , 10/1/1987
Repro/Dev. Tox: developmental toxicity , 9/1/1996
Canada Regulations
Canadian WHMIS Ingredient Disclosure List (IDL)
Components of this material have been checked against the Canadian WHMIS Ingredients Disclosure List. The List is composed of chemicals which must be identified on MSDSs if they are included in products which meet WHMIS criteria specified in the Controlled Products Regulations and are present above the threshold limits listed on the IDL

<table>
<thead>
<tr>
<th>Component</th>
<th>IDL Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel Carbonyl</td>
<td>0.1 %</td>
</tr>
</tbody>
</table>

WHMIS Classification
B2, D1A, D2A

Component Analysis - Inventory
NICKEL CARBONYL (13463-39-3)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>DSL</td>
<td>EIN</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**NFPA Ratings**
Health: 4 Fire: 3 Reactivity: 3
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

**Key / Legend**
ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; RID - European Rail Transport; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States

**Other Information**
Electronic Fluorocarbons makes no express or implied warranties, guarantees or representations regarding the product or the information herein, including but not limited to any implied warranty of merchantability or fitness for use. Electronic Fluorocarbons shall not be liable for any personal injury, property or other damages of any nature, whether compensatory, consequential, exemplary, or otherwise, resulting from any publication, use or reliance upon the information herein.