

**1. IDENTIFICATION**

**Catalog Number / Product Name:** 30008 / VOA Calibration Mix #3  
**Company:** Restek Corporation  
**Address:** 110 Benner Circle  
Bellefonte, Pa. 16823  
**Phone#:** 814-353-1300  
**Fax#:** 814-353-1309  
**Emergency#:** 800-424-9300 (CHEMTREC)  
703-527-3887 (Outside the US)  
**Email:** www.restek.com  
**Revision Number:** 10  
**Intended use:** For Laboratory use only

**2. HAZARD(S) IDENTIFICATION****Emergency Overview:****GHS Hazard Symbols:**

**GHS Classification:** Carcinogenicity Category 1B  
Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 1  
Hazardous for the ozone layer  
Flammable Liquid Category 2  
Specific Target Organ Systemic Toxicity (STOT) - Repeated Exposure Category 2  
Acute Toxicity - Dermal Category 3  
Acute Toxicity - Oral Category 3

**GHS Signal Word:** Danger

**GHS Hazard:** Highly flammable liquid and vapour.  
Toxic if swallowed or in contact with skin.  
May cause cancer.  
Causes damage to organs.  
May cause damage to organs through prolonged or repeated exposure.  
Harms public health and the environment by destroying ozone in the upper atmosphere.

**GHS Precautions:**

**Safety Precautions:** Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
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/ventilation and lighting equipment.  
Use only non-sparking tools.  
Take precautionary measures against static discharge.  
Do not breathe dust/fume/gas/mist/vapours/spray.  
Wash hands and skin thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Wear protective gloves/protective clothing/eye protection/face protection.

**First Aid Measures:** IF SWALLOWED: Immediately call a POISON CENTER/doctor/....  
IF ON SKIN: Wash with plenty of soap and water.  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF exposed: Call a POISON CENTER or doctor/physician.  
 IF exposed or concerned: Get medical advice/attention.  
 Call a POISON CENTER or doctor/physician if you feel unwell.  
 Specific treatment see section 4.  
 Rinse mouth.  
 Take off immediately all contaminated clothing and wash it before reuse.  
 In case of fire: Use extinguishing media in section 5 for extinction.

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

**Disposal:** Dispose of contents/container according to section 13 of the SDS.  
 Refer to manufacturer/supplier for information on recovery/recycling.

**Single Exposure Target Organs:** Specific target organ toxicity - Single exposure - STOT SE 1: H370 Causes damage to organs. (C >= 10 %; No information to prove exclusion of certain routes of exposure); Specific target organ toxicity - Single exposure - STOT SE 2: H371 May cause damage to organs. (3 % <= C <10 %; Concentration limits for acute toxicity cannot be translated into GHS from the DSD especially when minimum classifications are given)

**Repeated Exposure Target Organs:** Specific target organ toxicity - Repeated exposure - STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure. (C >= 1 %; No information to prove exclusion of certain routes of exposure)

### 3. COMPOSITION / INFORMATION ON INGREDIENT

Chemical Name	CAS #	EINEC #	% Composition
methanol	67-56-1	200-659-6	98
m-xylene	108-38-3	203-576-3	0.2
Carbon tetrachloride	56-23-5	200-262-8	0.2
1,1-Dichloroethylene	75-35-4	200-864-0	0.2
1,1,2-trichloroethane	79-00-5	201-166-9	0.2
1,2-dichloropropane	78-87-5	201-152-2	0.2
Trichloroethene	79-01-6	201-167-4	0.2
chlorobenzene	108-90-7	203-628-5	0.2
1,1-dichloroethane	75-34-3	200-863-5	0.2
Dichloromethane	75-09-2	200-838-9	0.2
chloroform	67-66-3	200-663-8	0.2

### 4. FIRST-AID MEASURES

**Inhalation:** Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. If not breathing, give artificial respiration and have a trained individual administer oxygen. Get medical attention immediately. Remove the victim from the contaminated area while protecting yourself from exposure by wearing an appropriate respirator. Put a similar respirator on the victim.

**Eyes:** Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention. Immediately flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention and monitor the eye daily as advised by your physician. Serious harm (damage) may result if treatment is delayed. Continue to flush eyes while awaiting medical attention.

**Skin Contact:** Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists. Do NOT take contaminated clothing home.

**Ingestion:** Do not induce vomiting and seek medical attention immediately. Drink two glasses of water or milk to dilute. Provide medical care provider with this SDS. Severely irritating. Do not induce vomiting. Seek medical attention immediately. Drink 2 glasses of water or milk to dilute. Never give anything by mouth to an unconscious person.

### 5. FIRE- FIGHTING MEASURES

**Extinguishing Media:** Use alcohol resistant foam, carbon dioxide, or dry chemical extinguishing agents. Water may be ineffective but water spray can be used to extinguish a fire if swept across the base of the flames. Water can absorb heat and

keep exposed material from being damaged by fire. Use alcohol resistant foam, carbon dioxide, or dry chemical when fighting fires. Water or foam may cause frothing if liquid is burning but it still may be a useful extinguishing agent if carefully applied to the surface of the fire. Do Not direct a stream of water into the hot burning liquid.

**Fire and/or Explosion Hazards:**

Vapors may be ignited by sparks, flames or other sources of ignition if material is above the flash point giving rise to a fire (Class B). Vapors are heavier than air and may travel to a source of ignition and flash back.

**Fire Fighting Methods and Protection:**

Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Flammable component(s) of this material may be lighter than water and burn while floating on the surface.

**Hazardous Combustion Products:**

Carbon dioxide, Carbon monoxide, Hydrogen chloride, Chlorine containing gases, Phosgene, Toxic gases

**6. ACCIDENTAL RELEASE MEASURES**

**Personal Precautions and Equipment:**

Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.

**Methods for Clean-up:**

Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

**7. HANDLING AND STORAGE**

**Handling Technical Measures and Precautions:**

Toxic or severely irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. Use spark-proof tools and explosion-proof equipment As with all chemicals, good industrial hygiene practices should be followed when handling this material. Wash thoroughly after handling Avoid contact with material. Special care must be taken to avoid inhalation exposure when using this product at high temperatures (above 300 degrees F) or if product is sanded, ground or cut. "Empty" containers retain product residue (liquid and/or vapor) and can be dangerous.

**Storage Technical Measures and Conditions:**

Store in a cool dry ventilated location. Isolate from incompatible materials and conditions. Keep container(s) closed. Keep away from sources of ignition Store in a cool place in original container and protect from sunlight Keep away from food and drinking water. Keep away from heat, sparks, and flame

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**United States:**

Chemical Name	CAS No.	IDLH	ACGIH STEL	ACGIH TLV-TWA	OSHA Exposure Limit
methanol	67-56-1	6000 ppm IDLH	250 ppm STEL	200 ppm TWA	200 ppm TWA; 260 mg/m3 TWA
Carbon tetrachloride	56-23-5	ND	10 ppm STEL; 63 mg/m3 STEL	5 ppm TWA; 31 mg/m3 TWA	10 ppm TWA
Trichloroethene	79-01-6	1000 ppm IDLH	25 ppm STEL	10 ppm TWA	100 ppm TWA
Dichloromethane	75-09-2	2300 ppm IDLH	None Known	50 ppm TWA	25 ppm TWA; 125 ppm STEL (15 min. TWA)
chloroform	67-66-3	500 ppm IDLH	None Known	10 ppm TWA	No data available

**Personal Protection:****Engineering Measures:**

Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure. Local exhaust ventilation, process enclosures, or other engineering controls are imperative when handling or using this product to avoid overexposure. Engineering controls must be designed to meet the OSHA chemical specific standard in 29 CFR 1910. Engineering controls must be designed to control vapor concentrations to below levels published in 29 CFR 1910.1000. Facilities storing or using this material should be equipped with an eyewash and safety shower.

**Respiratory Protection:**

Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms. Follow a respiratory protection program that meets 29 CFR 1910.134 and ANSI Z88.2 requirements whenever work place conditions warrant the use of a respirator. Wear a NIOSH approved respirator if any exposure is possible. If an exposure limit is exceeded or if an operator is experiencing symptoms of inhalation overexposure as explained in Section 3, provide respiratory protection.

**Eye Protection:**

Wear chemically resistant safety glasses with side shields when handling this product. Do not wear contact lenses. Wear goggles and a Face shield

**Skin Protection:**

Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work. Wear protective gloves. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work

**9. PHYSICAL AND CHEMICAL PROPERTIES**


---

<b>Appearance, color:</b>	No data available
<b>Odor:</b>	Mild
<b>Physical State:</b>	No data available
<b>pH:</b>	Not applicable
<b>Vapor Pressure:</b>	No data available
<b>Vapor Density:</b>	1.1 (air = 1)
<b>Boiling Point (°C):</b>	87.2 °C (HSDB) 60.5 - 61.2 °C 64.7 °C at 760 mmHg (HSDB)
<b>Melting Point (°C):</b>	-98 °C
<b>Flash Point (°F):</b>	52
<b>Flammability:</b>	Highly Flammable
<b>Upper Flammable/Explosive Limit, % in air:</b>	36
<b>Lower Flammable/Explosive Limit, % in air:</b>	6
<b>Autoignition Temperature (°C):</b>	464 deg C
<b>Decomposition Temperature (°C):</b>	No data available
<b>Specific Gravity:</b>	0.791 - 0.792 g/cm3 at 20 °C
<b>Evaporation Rate:</b>	No data available
<b>Odor Threshold:</b>	ND
<b>Solubility:</b>	Moderate; 50-99%
<b>Partition Coefficient: n-octanol in water:</b>	2.64
<b>VOC % by weight:</b>	99.6
<b>Molecular Weight:</b>	32.04

**10. STABILITY AND REACTIVITY**


---

<b>Stability:</b>	Stable under normal conditions.
<b>Conditions to Avoid:</b>	Temperatures above flash point in combination with sparks, open flames, or other sources of ignition. Contamination Mechanical shock High temperatures
<b>Materials to Avoid / Chemical Incompatibility:</b>	Strong oxidizing agents Metals Caustics (bases)
<b>Hazardous Decomposition Products:</b>	Carbon dioxide Carbon monoxide Hydrogen chloride Chlorine containing gases Phosgene Toxic gases

**11. TOXICOLOGICAL INFORMATION**


---

<b>Routes of Entry:</b>	Inhalation, Skin Contact, Eye Contact, Ingestion
<b>Target Organs Potentially Affected By Exposure:</b>	Eyes, Central nervous system stimulation, Skin, GI

**Chemical Interactions That Change Toxicity:** Tract, Respiratory Tract  
None Known

**Immediate (Acute) Health Effects by Route of Exposure:**

**Inhalation Irritation:** Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.

**Inhalation Toxicity:** Harmful! Can cause systemic damage (see "Target Organs)Methanol can cause central nervous system depression and overexposure can cause damage to the optic nerve resulting in visual impairment or blindness.

**Skin Contact:** Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.

**Eye Contact:** Can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.

**Ingestion Irritation:** Irritating to mouth, throat, and stomach. Can cause abdominal discomfort, nausea, vomiting and diarrhea.Highly toxic and may be fatal if swallowed.

**Ingestion Toxicity:** Toxic if swallowed. May cause target organ failure and/or death.May be fatal if swallowed.

**Long-Term (Chronic) Health Effects:**

**Carcinogenicity:** Contains a probable or known human carcinogen.

**Reproductive and Developmental Toxicity:** Contains a known human reproductive and/or developmental hazard.

**Inhalation:** Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.Toxic! Can cause systemic damage upon prolonged and/or repeated exposure (see "Target Organs). Harmful! Can cause systemic damage upon prolonged and/or repeated exposure (see "Target Organs)

**Skin Contact:** Upon prolonged or repeated contact, can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.

**Skin Absorption:** Upon prolonged or repeated exposure, harmful if absorbed through the skin. May cause severe irritation and systemic damage

**Ingestion:** Toxic if swallowed. May cause target organ failure and/or death.

**Component Toxicological Data:**

**NIOSH:**

<b>Chemical Name</b>	<b>CAS No.</b>	<b>LD50/LC50</b>
Carbon tetrachloride	56-23-5	Inhalation LC50 Rat : 8000 ppm/4H; Inhalation LC50 Mouse : 9526 ppm/8H; Oral LD50 Rat : 2350 mg/kg; Oral LD50 Mouse : 8263 mg/kg; Dermal LD50 Rabbit : >20 gm/kg
Ethylene, trichloro-	79-01-6	Dermal LD50 Rabbit 29000 mg/kg; Inhalation LC50 Rat 26 mg/L 4 h vapor; Oral LD50 Rat 4920 mg/kg
Methane, dichloro-	75-09-2	Inhalation LC50 Rat 53 mg/L 6 h
Chloroform	67-66-3	Dermal LD50 Rabbit >20 g/kg
Methanol	67-56-1	Inhalation LC50 Rat 22500 ppm 8 h

**Component Carcinogenic Data:**

**OSHA:**

<b>Chemical Name</b>	<b>CAS No.</b>	
Carbon tetrachloride	56-23-5	Present
Trichloroethylene	79-01-6	Present
Methylene chloride	75-09-2	25 ppm TWA (8 hr.); 125 ppm STEL (15 min.); 12.5 ppm Action Level (see 29 CFR 1910.1051); effective date for respiratory protection for certain employers to achieve the 8-hour TWA PEL is August 31, 1998; the start up date to install engineering controls is December 10, 1998.; {OSHA - 29 CFR 1910 Specifically Regulate
Chloroform	67-66-3	Present

**ACGIH:**

<b>Chemical Name</b>	<b>CAS No.</b>	
Carbon tetrachloride	56-23-5	A2 - Suspected Human Carcinogen
Trichloroethylene	79-01-6	A2 - Suspected Human Carcinogen
Dichloromethane	75-09-2	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
Chloroform	67-66-3	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

#### NIOSH:

<b>Chemical Name</b>	<b>CAS No.</b>	
Carbon tetrachloride	56-23-5	potential occupational carcinogen
Trichloroethylene	79-01-6	potential occupational carcinogen
Methylene chloride	75-09-2	potential occupational carcinogen
Chloroform	67-66-3	potential occupational carcinogen

#### NTP:

<b>Chemical Name</b>	<b>CAS No.</b>	
Trichloroethylene	79-01-6	Known Human Carcinogen

#### IARC:

<b>Chemical Name</b>	<b>CAS No.</b>	<b>Group No.</b>
Monograph 110 [in preparation]; Monograph 71 [1999]; Monograph 41 [1986]	78-87-5	Group 1
Monograph 106 [in preparation]; Monograph 63 [1995]	79-01-6	Group 1
Monograph 110 [in preparation]; Monograph 71 [1999]	75-09-2	Group 2A
Monograph 20, Supplement 7, Monograph 71; 1998	56-23-5	Group 2B
Monograph 119 [in preparation]; Monograph 71 [1999]; Supplement 7 [1987]; Monograph 39 [1986]	75-35-4	Group 2B
Monograph 73 [1999]	67-66-3	Group 2B

## 12. ECOLOGICAL INFORMATION

<b>Overview:</b>	Moderate ecological hazard. This product may be dangerous to plants and/or wildlife.
<b>Mobility:</b>	No data
<b>Persistence:</b>	No data
<b>Bioaccumulation:</b>	No data
<b>Degradability:</b>	Biodegrades slowly.
<b>Ecological Toxicity Data:</b>	No data available

## 13. DISPOSAL CONSIDERATIONS

<b>Waste Description of Spent Product:</b>	Spent or discarded material is a hazardous waste. Mixing spent or discarded material with other materials may render the mixture hazardous. Perform a hazardous waste determination on mixtures.
<b>Disposal Methods:</b>	Dispose of by incineration following Federal, State, Local, or Provincial regulations.
<b>Waste Disposal of Packaging:</b>	Comply with all Local, State, Federal, and Provincial Environmental Regulations.

## 14. TRANSPORTATION INFORMATION

<b>United States:</b>	
<b>DOT Proper Shipping Name:</b>	Flammable liquids, n.o.s. (Methanol, 1,1-Dichloroethane)
<b>UN Number:</b>	UN1993
<b>Hazard Class:</b>	3
<b>Packing Group:</b>	II
<b>International:</b>	
<b>IATA Proper Shipping Name:</b>	Flammable liquids, n.o.s. (Methanol, 1,1-Dichloroethane)

UN Number: UN1993  
 Hazard Class: 3  
 Packing Group: II

Marine Pollutant: No

Chemical Name	CAS#	Marine Pollutant	Severe Marine Pollutant
No data available			

## 15. REGULATORY INFORMATION

### United States:

Chemical Name	CAS#	CERCLA	SARA 313	SARA EHS 313	TSCA
methanol	67-56-1	X	X	-	X
Carbon tetrachloride	56-23-5	X	X	-	X
Trichloroethene	79-01-6	X	X	-	X
Dichloromethane	75-09-2	X	X	-	X
chloroform	67-66-3	X	X	X	X

### The following chemicals are listed on CA Prop 65:

Chemical Name	CAS #	Regulation
Carbon tetrachloride	56-23-5	Prop 65 Cancer
Vinyl trichloride	79-00-5	Prop 65 Cancer
1,2-Dichloropropane	78-87-5	Prop 65 Cancer
Trichloroethylene	79-01-6	Prop 65 Cancer
1,1-Dichloroethane	75-34-3	Prop 65 Cancer
Dichloromethane Dichloromethane (Methylene chloride)	75-09-2	Prop 65 Cancer
Chloroform	67-66-3	Prop 65 Cancer
Trichloroethylene	79-01-6	Prop 65 Develop Tox
Chloroform	67-66-3	Prop 65 Develop Tox
Methanol	67-56-1	Prop 65 Develop Tox
Trichloroethylene	79-01-6	Prop 65 Rep Male

### State Right To Know Listing:

Chemical Name	CAS#	New Jersey	Massachusetts	Pennsylvania	California
methanol	67-56-1	X	X	X	X
m-xylene	108-38-3	X	X	X	X
Carbon tetrachloride	56-23-5	X	X	X	X
1,1-Dichloroethylene	75-35-4	X	X	X	X
1,1,2-trichloroethane	79-00-5	X	X	X	X
1,2-dichloropropane	78-87-5	X	X	X	X
Trichloroethene	79-01-6	X	X	X	X
chlorobenzene	108-90-7	X	X	X	X
1,1-dichloroethane	75-34-3	X	X	X	X
Dichloromethane	75-09-2	X	X	X	X
chloroform	67-66-3	X	X	X	X

## 16. OTHER INFORMATION

**Prior Version Date:** 12/13/18

**Other Information:** Any changes to the SDS compared to previous versions are marked by a vertical line in front of the concerned paragraph.

**References:** No data available

**Disclaimer:** Restek Corporation provides the descriptions, data and information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. It is provided for your guidance only. Because many factors may affect processing or application/use, Restek Corporation recommends you perform an assessment to determine the suitability of a product for your particular purpose prior to use. No warranties of any kind, either expressed or implied, including fitness for a particular purpose, are made regarding products described, data or information set forth. In no case shall the descriptions, information, or data provided be considered a part of our terms and conditions of sale. Further, the descriptions,

data and information furnished hereunder are given gratis. No obligation or liability for the description, data and information given are assumed. All such being given and accepted at your risk.