

**SEPARATION SYSTEMS, INC.***Experts in Gas Chromatography*100 Nightingale Lane
Gulf Breeze, Florida 32561

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SAFETY DATA SHEET

Creation Date 18-Oct-2016

Revision Date 24-Oct-2016

Revision 1.0

1. Identification

Product Name: D4815 Calibration Solutions

Product Part Number: SS-ASTM D4815-04, SD-ASTM-D4815-04

Synonyms Trace Oxygenates Standard for ASTM D4815

Recommended Use Analytical Chemistry

Uses advised against No Information available

Details of the supplier of the safety data sheet

CompanySeparation Systems, Inc.
100 Nightingale Lane
Gulf Breeze, FL 32561
Tel: (850) 932-1433**Emergency Telephone Number**Call CHEMTREC, day or night:
Domestic North America 800-424-9300
International (703) 527-3887 (collect calls accepted)

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	Category 2
Skin irritation	Category 2
Eye irritation	Category 2A
Aspiration hazard	Category 1
Specific target organ toxicity (single exposure)	Category 1
Acute toxicity, Inhalation	Category 3
Acute toxicity, Dermal	Category 3
Acute toxicity, Oral	Category 3
Reproductive toxicity	Category 1B
Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1

Label Elements

Signal Word

Danger

Hazard StatementsHighly flammable liquid and vapor
Toxic if swallowed, in contact with skin or if inhaled
May be fatal if swallowed and enters airways
Causes skin irritation
Causes serious eye irritation
May cause drowsiness or dizziness
Causes damage to organs
May damage fertility or the unborn child
Very toxic to aquatic life with long lasting effects



Precautionary Statements

Prevention

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/ventilating/lighting/equipment.
 Use only non-sparking tools.
 Take precautionary measures against static discharge.
 Avoid breathing dust/fumes/gas/mist/vapors/spray.
 Wash skin thoroughly after handling.
 Do not eat/drink/smoke when using this product.
 Use only outdoors or in a well-ventilated area.
 Avoid release to the environment.
 Wear protective gloves/protective clothing/eye protection/face protection.

Response

IF exposed or concerned: Call a POISON CENTER/Doctor.
 Call a POISON CENTER or doctor/physician if you feel unwell.
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/Doctor.
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 IF SKIN irritation occurs: Get medical advice/attention.
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
 Do NOT induce vomiting.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 If eye irritation persists: Get medical advice/attention.
 Take off contaminated clothing and wash before reuse.
 In case of fire: Use dry sand, dry chemical, or alcohol-resistant foam for extinction.
 Collect spillage. Hazardous to aquatic environment.

Storage

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

Disposal

Dispose of contents/container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC)

None.

3. Composition / information on ingredients

Product Information:		
Substance Name	CAS #	Percent
D4815 Calibration Solutions	None	100
Component Information:		
Component	CAS #	Percent
Methanol	67-56-1	0.1 – 15.0
Ethanol	64-17-5	0.1 – 15.0
<i>tert</i> -Butyl methyl ether (MTBE)	1634-04-4	0.1 – 15.0
<i>tert</i> -Amyl methyl ether (TAME)	994-05-8	0.1 – 15.0
1,2-Dimethoxyethane (1,2-DME)	110-71-4	4.0 – 5.0
Isooctane	540-84-1	45
p-Xylene	106-42-3	25

4. First-aid measures

General Advice	Consult a physician. Show this Safety Data Sheet to the doctor in attendance. Move out of dangerous area.
Eye Contact	Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Gently remove contacts while flushing. Consult a physician.
Skin Contact	Wash off with soap and plenty of water. Consult a physician.
Inhalation	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
Ingestion	Do NOT induce vomiting because of danger of aspirating liquid into lungs, causing serious damage and chemical pneumonitis. If spontaneous vomiting occurs, keep head below hips, or if patient is lying down, turn body and head to side to prevent aspiration and monitor for breathing difficulty. Never give anything by mouth to an unconscious person. Consult a physician.
Most important symptoms/effects	Acute: Headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue. Delayed: Dry skin and possible irritation with repeated or prolonged exposure.
Indication of immediate medical attention and special treatment needed	No data available.

5. Fire-fighting measures

Suitable Extinguishing Media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Firefighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.
Unsuitable Extinguishing Media	Do not use straight water streams to avoid spreading fire.

Specific Hazards Arising from the Chemical
Carbon oxides.

Protective Equipment and Precautions for Firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

Further Information
Use water spray to cool unopened containers.

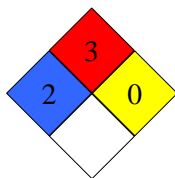
NFPA

Health
2

Flammability
3

Instability
0

Physical hazards
N/A



6. Accidental release measures

Personal Precautions	Use personal protective equipment. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating in low areas to form explosive concentrations.
Environmental Precautions	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods for Containment and Clean Up Contain spillage and collect with an electrically protected vacuum or by wet-brushing and place in a container for disposal according to local regulations.

7. Handling and storage

Handling Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Keep away from sources of ignition – No smoking. Take measures to prevent the buildup of electrostatic charge.

Storage Keep container tightly closed in a cool, dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
<i>p</i> -Xylene	TWA: 100 ppm STEL: 150 ppm	TWA: 100 ppm TWA: 435 mg/m ³	TWA: 100 ppm STEL: 150 ppm
<i>tert</i> -Butyl methyl ether (MTBE)	TWA: 50 ppm	-	-
<i>tert</i> -Amyl methyl ether (TAME)	No occupational exposure limit values	No occupational exposure limit values	No occupational exposure limit values
Methanol	TWA: 200 ppm STEL: 250 ppm Skin	(Vacated) TWA: 200 ppm (Vacated) TWA: 260 mg/m ³ (Vacated) STEL: 250 ppm (Vacated) STEL: 325 mg/m ³ Skin TWA: 200 ppm TWA: 260 mg/m ³	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m ³ STEL: 250 ppm STEL: 325 mg/m ³
1,2-Dimethoxyethane (1,2-DME)	No occupational exposure limit values	No occupational exposure limit values	No occupational exposure limit values
Ethanol	STEL: 1000 ppm	(Vacated) TWA: 1000 ppm (Vacated) TWA: 1900 mg/m ³ TWA: 1000 ppm TWA: 1900 mg/m ³	IDLH: 3300 ppm TWA: 1000 ppm TWA: 1900 mg/m ³
Isooctane	TWA: 300 ppm	-	-

ACGIH – American Conference of Governmental Industrial Hygienists

OSHA – Occupational Safety and Health Administration

NIOSH IDLH – The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures Safety shower and eye bath. Use explosion-proof electrical/ventilating/lighting/equipment. Use only in a chemical fume hood. Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/face Protection Face shield and safety glasses are recommended. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Wash hands before eating, drinking or smoking.

9. Physical and chemical properties

Physical State

Clear Liquid

Appearance	Colorless
Odor	No available data
Odor Threshold	No available data
pH	No available data
Melting Point/Range	No available data
Boiling Point/Range	> 64 °C
Flash Point	-12 °C / 10.4 °F
Evaporation Rate	No available data
Flammability (solid, gas)	No available data
Flammability Limit in Air (%)	
Upper	No available data
Lower	
Vapor Pressure	No available data
Vapor Density	No available data
Relative Density	No available data
Solubility	No available data
Partition coefficient; n-octanol/water	No available data
Auto-ignition Temperature	No available data
Decomposition Temperature	No available data
Viscosity	No available data
VOC Content (%)	No available data
Density	No available data

10. Stability and reactivity

Reactive Hazard	None known, based on available information.
Stability	Stable under normal conditions.
Conditions to Avoid	Keep away from open flames, hot surfaces, and sources of ignition.
Incompatible Materials	Strong oxidizing agents, Acids, Alkali metals, Acid anhydrides, Acid chlorides, Reducing agents.
Hazardous Decomposition Products	Hazardous decomposition products formed under fire conditions – carbon oxides.
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

11. Toxicological information

Acute Toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
<i>p</i> -Xylene	5000 mg/kg (Rat)	No data available	4550 ppm (Rat) 4 h
<i>tert</i> -Butyl methyl ether (MTBE)	2963 mg/kg (Rat)	10000 mg/kg (Rabbit)	23576 ppm (Rat) 4 h
<i>tert</i> -Amyl methyl ether (TAME)	1602 mg/kg (Rat)	No data available	5400 mg/m ³ (Rat) 4 h
Methanol	> 1187 – 2769 mg/kg (Rat)	17100 mg/kg (Rabbit)	128.2 mg/L (Rat) 4 h
1,2-Dimethoxyethane (1,2-DME)	5370 mg/kg (Rat)	5000 mg/kg (Rat)	< 63 mg/L (Rat) 6 h
Ethanol	3450 mg/kg (Mouse)	Not listed	20000 ppm (Rat) 10 h
Isooctane	> 2500 mg/kg (Rat)	Not listed	47.4 mg/L (Rat) 1 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation Irritating to the eyes, respiratory system and skin.

Sensitization No information available.

Carcinogenicity The table below indicates whether each agency has listed any component as a carcinogen.

Component	CAS No.	IARC	NTP	ACGIH	OSHA	Mexico
<i>p</i> -Xylene	106-42-3	Group 3	Not listed	A4	Not listed	Not listed

<i>tert</i> -Butyl methyl ether (MTBE)	1634-04-4	Group 3	Not listed	A3	Not listed	Not listed
<i>tert</i> -Amyl methyl ether (TAME)	994-05-8	Not listed	Not listed	Not listed	Not listed	Not listed
Methanol	67-56-1	Not listed	Not listed	Not listed	Not listed	Not listed
1,2-Dimethoxyethane (1,2-DME)	110-71-4	Not listed	Not listed	Not listed	Not listed	Not listed
Ethanol	64-17-5	Group 1	Not listed	A3	X	Not listed
Isooctane	540-84-1	Not listed	Not listed	Not listed	Not listed	Not listed

IARC (International Agency for Research on Cancer)

Group 1 – Carcinogenic to Humans

Group 2A – Probably Carcinogenic to Humans

Group 2B – Possibly Carcinogenic to Humans

ACGIH (American Conference of Governmental Industrial Hygienists)

A1 – Known Human Carcinogen

A2 – Suspected Human Carcinogen

A3 – Animal Carcinogen

OSHA (Occupational Safety & Health Administration)

X – Present

Mexico – Occupational Exposure Limits – Carcinogens

A1 – Confirmed Human Carcinogen

A2 – Suspected Human Carcinogen

A3 – Confirmed Animal Carcinogen

A4 – Not Classifiable as a Human Carcinogen

A5 – Not Suspected as a Human Carcinogen

Mutagenic Effects	Mutagenic effects have occurred in humans.
Reproductive Effects	Adverse reproductive effects have occurred in humans.
Developmental Effects	No information available.
Teratogenicity	Teratogenic effects have occurred in humans.
STOT – single exposure	Respiratory system, Central nervous system (CNS)
STOT – repeated exposure	Liver, Kidney, Blood
Aspiration hazard	May be fatal if swallowed and enters airways.
Symptoms / effects, both acute and delayed	Inhalation of high vapor concentrations may cause effects like headache, dizziness, tiredness, nausea and vomiting.
Endocrine Disruptor Information	No information available.
Additional Information	The toxicological properties have not been fully investigated.

12. Ecological information

<u>Ecotoxicity</u>	Very toxic to aquatic organisms – may cause long-term adverse effects in the aquatic environment.
<u>Persistence and Degradability</u>	No data available.
<u>Bioaccumulation</u>	No data available.
<u>Mobility in soil</u>	No data available.
<u>Other adverse effects</u>	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.

13. Disposal considerations

Description of Waste Residues	This material may be a flammable liquid waste.
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Safe Handling of Wastes Handle in accordance with applicable local, state, and federal regulations. Use personal protection measures as required.

Disposal of Wastes/Methods Of Disposal Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Methods of Contaminated Packaging Disposal Dispose of as unused product.

14. Transport information

Transport Information This material when transported via US commerce would be regulated by DOT Regulations.

DOT

UN No.	UN1992
Proper Shipping Name	Flammable liquid, toxic, n.o.s. (Isooctane, Methanol)
Hazard Class	3 (6.1)
Packing Group	II

IATA

UN No.	UN1992
Proper Shipping Name	Flammable liquid, toxic, n.o.s. (Isooctane, Methanol)
Hazard Class	3 (6.1)
Packing Group	II

IMDG

UN No.	UN1992
Proper Shipping Name	Flammable liquid, toxic, n.o.s. (Isooctane, Methanol)
Hazard Class	3 (6.1)
Packing Group	II

TDG (Canada)

UN No.	UN1992
Proper Shipping Name	Flammable liquid, toxic, n.o.s. (Isooctane, Methanol)
Hazard Class	3 (6.1)
Packing Group	II

15. Regulatory information

SARA Section 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 311/312 Hazards: The following EPA hazard categories apply to this product:

Acute Health Hazard
Chronic Health Hazard
Fire Hazard
Reactive Hazard

SARA Section 313: The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS No.
<i>tert</i> -Butyl methyl ether	1634-04-4
Methanol	67-56-1
1,2-Dimethoxyethane	110-71-4

State Right-to-Know

Component	CAS No.	Massachusetts	Pennsylvania	New Jersey
<i>p</i> -Xylene	106-42-3	X	X	X
<i>tert</i> -Butyl methyl ether (MTBE)	1634-04-4	X	X	X
<i>tert</i> -Amyl methyl ether (TAME)	994-05-8	-	X	X
Methanol	67-56-1	X	X	X
1,2-Dimethoxyethane (1,2-DME)	110-71-4	X	X	X
Ethanol	64-17-5	X	X	X
Isooctane	540-84-1	X	X	X

California Prop. 65 Components

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

	CAS No.	Revision Date
Methanol	67-56-1	2012-03-16

16. Other information

References:	Not Available
Creation Date	18-Oct-2016
Revision Date	24-Oct-2016
Version:	1.0

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, expressed or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Separation Systems, Inc. be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Separation Systems Inc. has been advised of the possibility of such damages.