



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
US - OSHA Hazard Communication Standard (29 CFR 1910.1200)

Issuing Date 23-May-2023

Revision Date 23-May-2023

Revision Number 1

## 1. Identification

### Product identifier

**Product Name** 3,3',5-Triiodothyronine-[13C6] HCl salt CertiMass Solution

### Other means of identification

**UN/ID no** UN1230

**Synonyms** S8165-0.1

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

**Recommended use** Analytical standard

**Restrictions on use** For R&D use only

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

#### Supplier Address

Entegris, Inc.  
129 Concord Road  
Building 2  
Billerica, MA 01821  
USA  
Telephone Number: + 1-952-556-4181  
Telephone Number: +1-800-394-4083 (toll free within North America)

**E-mail** Product.stewardship@entegris.com

### Emergency telephone number

**Emergency telephone** CHEMTREC: +1-703-527-3887 (INTERNATIONAL)  
1-800-424-9300 (NORTH AMERICA)

## 2. Hazard(s) identification

### Classification

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

Acute toxicity - Oral	Category 3
Acute toxicity - Dermal	Category 3
Acute toxicity - Inhalation (Vapors)	Category 3
Specific target organ toxicity (single exposure)	Category 1

### Hazards not otherwise classified (HNOC)

Not applicable.

**Label elements****Danger****Hazard statements**

Toxic if swallowed.

Toxic in contact with skin.

Toxic if inhaled.

Causes damage to organs.

**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling.

Do not eat, drink or smoke when using this product.

Wear protective gloves and protective clothing.

Use only outdoors or in a well-ventilated area.

Do not breathe vapor or mist.

**Precautionary Statements - Response**

IF exposed: Call a POISON CENTER or doctor.

Specific treatment may be needed, see first aid section of Safety Data Sheet.

IF ON SKIN: Wash with plenty of water and soap.

Call a POISON CENTER or doctor if you feel unwell.

Take off immediately all contaminated clothing and wash it before reuse.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER or doctor.

IF SWALLOWED: Immediately call a POISON CENTER or doctor.

Rinse mouth.

**Precautionary Statements - Storage**

Store locked up.

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

**Precautionary Statements - Disposal**

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

**Other information**

Causes mild skin irritation. Harmful to aquatic life.

### 3. Composition/information on ingredients

**Substance**

Not applicable.

**Mixture**

Chemical name	CAS No	Weight-%	Trade secret
Methanol	67-56-1	>99	*
Ammonia, anhydrous	7664-41-7	<0.25	*
(2S)-2-Amino-3-[4-(4-hydroxy-3-iodophenoxy)-3,5-diiodo(1,2,3,4,5,6-13C6)cyclohexa-1,3,5-trien-1-yl]propanoic acid hydrochloride	1217473-60-3	<0.1	*

\*The exact percentage (concentration) of composition has been withheld as a trade secret.

## 4. First-aid measures

### Description of first aid measures

<b>General advice</b>	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
<b>Inhalation</b>	Remove to fresh air. IF exposed or concerned: Get medical advice/attention.
<b>Eye contact</b>	Get immediate medical attention. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing.
<b>Skin contact</b>	Get immediate medical attention. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
<b>Ingestion</b>	Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Get immediate medical attention.
<b>Self-protection of the first aider</b>	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Wear personal protective clothing (see section 8). Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

### Most important symptoms and effects, both acute and delayed

<b>Symptoms</b>	Prolonged contact may cause redness and irritation.
<b>Effects of Exposure</b>	No information available.

### Indication of any immediate medical attention and special treatment needed

<b>Note to physicians</b>	Treat symptomatically.
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## 5. Fire-fighting measures

<b>Suitable Extinguishing Media</b> Large Fire	CO <sub>2</sub> , dry chemical, dry sand, alcohol-resistant foam. Water spray, Fog, Alcohol resistant foam.
<b>Unsuitable extinguishing media</b>	No information available.
<b>Specific hazards arising from the chemical</b>	Severe fire hazard. Vapors or gases may ignite at distant ignition sources and flash back. Vapor/air mixtures are explosive above flash point.
<b>Hazardous combustion products</b>	Carbon oxides.
<b>Explosion data</b>	
<b>Sensitivity to mechanical impact</b>	None.
<b>Sensitivity to static discharge</b>	None.
<b>Special protective equipment and precautions for fire-fighters</b>	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor; if this is impossible, withdraw from area and let fire

burn.

## 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

**Personal precautions** Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas.

**Other information** Refer to protective measures listed in Sections 7 and 8.

### Methods and material for containment and cleaning up

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch or walk through spilled material. Prevent product from entering drains.

## 7. Handling and storage

### Precautions for safe handling

**Advice on safe handling** Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Take off contaminated clothing and wash before reuse.

### Conditions for safe storage, including any incompatibilities

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up. Keep away from Incompatible materials.

## 8. Exposure controls/personal protection

### Control parameters

#### Exposure Limits

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
Methanol 67-56-1	STEL: 250 ppm TWA: 200 ppm S*	TWA: 200 ppm TWA: 260 mg/m <sup>3</sup> (vacated) TWA: 200 ppm (vacated) TWA: 260 mg/m <sup>3</sup> (vacated) STEL: 250 ppm (vacated) STEL: 325 mg/m <sup>3</sup> (vacated) S*	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m <sup>3</sup> STEL: 250 ppm STEL: 325 mg/m <sup>3</sup>
Ammonia, anhydrous 7664-41-7	STEL: 35 ppm TWA: 25 ppm	TWA: 50 ppm TWA: 35 mg/m <sup>3</sup> (vacated) STEL: 35 ppm (vacated) STEL: 27 mg/m <sup>3</sup>	IDLH: 300 ppm TWA: 25 ppm TWA: 18 mg/m <sup>3</sup> STEL: 35 ppm STEL: 27 mg/m <sup>3</sup>

#### Biological occupational exposure limits

Chemical name	ACGIH
Methanol 67-56-1	15 mg/L - urine (Methanol) - end of shift

**Appropriate engineering controls**

**Engineering controls** Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Provide an emergency eye wash fountain and quick drench shower in the immediate work area. Wear safety glasses with side shields (or goggles).

**Hand protection** Wear suitable gloves. Impervious gloves.

**Skin and body protection** Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

**Respiratory protection** Respirators depend on exposure level. SCBA with full face piece recommended during change outs and available in case of emergency.

**Other protective equipment** Recommendations are based on the product type. Consult with an industrial hygienist to determine the appropriate PPE for your specific use of this material.

**Environmental exposure controls** Avoid release to the environment.

**General hygiene considerations** Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

**9. Physical and chemical properties****Information on basic physical and chemical properties**

<b>Appearance</b>	
Physical state	Liquid
Color	colorless
<b>Odor</b>	No data available
<b>Odor threshold</b>	No data available

<b><u>Property</u></b>	<b><u>Values</u></b>	<b><u>Remarks • Method</u></b>
pH		No data available
pH (as aqueous solution)		No data available
Melting point / freezing point		No data available
Initial boiling point and boiling range		No data available
Flash point	6 °C	
Evaporation rate		No data available
Flammability		No data available
Flammability Limit in Air		
Upper flammability or explosive limits		No data available
Lower flammability or explosive limits		No data available
Vapor pressure		No data available
Relative vapor density		No data available
Relative density	0.787	
Water solubility		No data available
Solubility(ies)		No data available
Partition coefficient		No data available
Autoignition temperature		No data available
Decomposition temperature		No data available

Kinematic viscosity	No data available
Dynamic viscosity	No data available

**Other information**

Explosive properties	No information available
Oxidizing properties	No information available
Softening point	No information available
Molecular weight	No information available
VOC content	No information available
Liquid Density	No information available
Bulk density	No information available

**10. Stability and reactivity**

Reactivity	None under normal use conditions.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	None under normal processing.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Avoid prolonged exposure to heat, Incompatible materials.
Incompatible materials	Combustible material, Oxidizing materials, Metals, Halogens, Metal carbide, Bases, Amines.
Hazardous decomposition products	Carbon oxides.

**11. Toxicological information****Information on likely routes of exposure****Product Information**

Inhalation	May be harmful if inhaled.
Eye contact	Specific test data for the substance or mixture is not available.
Skin contact	Specific test data for the substance or mixture is not available. Toxic in contact with skin. (based on components). Causes mild skin irritation.
Ingestion	Specific test data for the substance or mixture is not available. Toxic if swallowed. (based on components).

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

Symptoms	Prolonged contact may cause redness and irritation.
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**Acute toxicity****Numerical measures of toxicity**

The following values are calculated based on chapter 3.1 of the GHS document:

ATEmix (oral)	100.90 mg/kg
ATEmix (dermal)	302.70 mg/kg
ATEmix (inhalation-vapor)	42.10 mg/l

**Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Methanol 67-56-1	= 6200 mg/kg ( Rat )	= 15840 mg/kg ( Rabbit )	= 22500 ppm ( Rat ) 8 h
Ammonia, anhydrous 7664-41-7	= 350 mg/kg ( Rat )	-	= 9850 mg/m <sup>3</sup> ( Rat ) 1 h = 13770 mg/m <sup>3</sup> ( Rat ) 1 h

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

<b>Skin corrosion/irritation</b>	Classification based on data available for ingredients. Causes mild skin irritation.
<b>Serious eye damage/eye irritation</b>	No information available.
<b>Respiratory or skin sensitization</b>	No information available.
<b>Germ cell mutagenicity</b>	No information available.
<b>Carcinogenicity</b>	No information available.
<b>Reproductive toxicity</b>	No information available.
<b>STOT - single exposure</b>	Based on the classification criteria of the Globally Harmonized System as adopted in the country or region with which this safety data sheet complies, this product has been determined to cause systemic target organ toxicity from acute exposure. (STOT SE). Causes damage to organs if swallowed. Causes damage to organs in contact with skin.
<b>STOT - repeated exposure</b>	No information available.
<b>Target organ effects</b>	Respiratory system. Eyes. Skin. Central nervous system. Gastrointestinal tract (GI).
<b>Aspiration hazard</b>	No information available.
<b>Other adverse effects</b>	No information available.
<b>Interactive effects</b>	No information available.

**12. Ecological information**

**Ecotoxicity** Harmful to aquatic life.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Methanol 67-56-1	-	LC50: =28200mg/L (96h, Pimephales promelas) LC50: >100mg/L (96h, Pimephales promelas) LC50: 19500 - 20700mg/L (96h, Oncorhynchus mykiss) LC50: 18 - 20mL/L (96h, Oncorhynchus mykiss) LC50: 13500 - 17600mg/L (96h, Lepomis macrochirus)	-	-
Ammonia, anhydrous 7664-41-7	-	LC50: =0.44mg/L (96h, Cyprinus carpio)	-	LC50: =25.4mg/L (48h, Daphnia magna)

		LC50: 0.26 - 4.6mg/L (96h, Lepomis macrochirus) LC50: =1.17mg/L (96h, Lepomis macrochirus) LC50: 0.73 - 2.35mg/L (96h, Pimephales promelas) LC50: =5.9mg/L (96h, Pimephales promelas) LC50: >1.5mg/L (96h, Poecilia reticulata) LC50: =1.19mg/L (96h, Poecilia reticulata)		
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**Persistence and degradability** No information available.

#### Bioaccumulation

#### Component Information

Chemical name	Partition coefficient
Methanol 67-56-1	-0.77

**Other adverse effects** No information available.

### 13. Disposal considerations

#### Disposal methods

**Waste from residues/unused products** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

**US EPA Waste Number** U154

**California Hazardous Waste Status** This product contains one or more substances that are listed with the State of California as a hazardous waste.

### 14. Transport information

#### DOT

<b>UNID no</b>	UN1230
<b>Proper shipping name</b>	METHANOL MIXTURE
<b>Transport hazard class(es)</b>	3
<b>Subsidiary class</b>	6.1
<b>Packing group</b>	II
<b>Reportable Quantity (RQ)</b>	(Methanol: RQ (kg)= 2270.00, Ammonia, anhydrous: RQ (kg)= 45.40) Methanol: RQ (lb)= 5000.00, Ammonia, anhydrous: RQ (lb)= 100.00
<b>Reportable quantity kg (calculated)</b>	Methanol: RQ (kg)= 2290.62, Ammonia, anhydrous: RQ (kg)= 18916.67
<b>Reportable quantity lbs. (calculated)</b>	Methanol: RQ (lb)= 5045.00, Ammonia, anhydrous: RQ (lb)= 41667.00
<b>Special Provisions</b>	IB2, T7, TP2
<b>DOT Marine Pollutant</b>	NP
<b>Description</b>	UN1230, METHANOL MIXTURE, 3 (6.1), II



**Emergency Response Guide Number** 131

**IATA**

**UN number or ID number** UN1230  
**UN proper shipping name** Methanol mixture  
**Transport hazard class(es)** 3  
**Subsidiary hazard class** 6.1  
**Packing group** II  
**Description** UN1230, Methanol mixture, 3 (6.1), II  
**Special Provisions** A113  
**ERG Code** 3L

**IMDG**

**UN number or ID number** UN1230  
**UN proper shipping name** METHANOL MIXTURE  
**Transport hazard class(es)** 3  
**Subsidiary hazard class** 6.1  
**Packing group** II  
**Marine pollutant** NP  
**Description** UN1230, METHANOL MIXTURE, 3 (6.1), II, (6°C C.C.)  
**Special Provisions** 279  
**EmS-No.** F-E, S-D

**15. Regulatory information****International Inventories**

Contact supplier for inventory compliance status

\*Contact supplier for details. One or more substances in this product are either not listed on the US TSCA inventory, listed on the confidential US TSCA inventory or are otherwise exempted from inventory listing requirements

**US Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical name	SARA 313 - Threshold Values %
Methanol - 67-56-1	1.0
Ammonia, anhydrous - 7664-41-7	1.0

**SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

**CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Ammonia, anhydrous 7664-41-7	100 lb	-	-	X

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive

Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	Reportable Quantity (RQ)
Methanol 67-56-1	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ
Ammonia, anhydrous 7664-41-7	100 lb	100 lb	RQ 100 lb final RQ RQ 45.4 kg final RQ

### US State Regulations

#### California Proposition 65

This product contains the following Proposition 65 chemicals:

Chemical name	California Proposition 65
Methanol - 67-56-1	Developmental

### U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Methanol 67-56-1	X	X	X
Ammonia, anhydrous 7664-41-7	X	X	X

### U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

## **16. Other information**

<b>NFPA</b>	Health hazards 3	Flammability 0	Instability 0	Special hazards -
<b>HMIS</b>	Health hazards 3*	Flammability 0	Physical hazards 0	Personal protection X
<i>Chronic Hazard Star Legend</i>	<i>* = Chronic Health Hazard</i>			

### Key or legend to abbreviations and acronyms used in the safety data sheet

#### **Legend Section 8: Exposure controls/personal protection**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

#### **Key literature references and sources for data used to compile the SDS**

Agency for Toxic Substances and Disease Registry (ATSDR)  
 U.S. Environmental Protection Agency ChemView Database  
 European Food Safety Authority (EFSA)  
 EPA (Environmental Protection Agency)  
 Acute Exposure Guideline Level(s) (AEGl(s))  
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
 U.S. Environmental Protection Agency High Production Volume Chemicals  
 Food Research Journal  
 Hazardous Substance Database  
 International Uniform Chemical Information Database (IUCLID)  
 Japan GHS Classification  
 Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)  
 NIOSH (National Institute for Occupational Safety and Health)  
 National Library of Medicine's ChemID Plus (NLM CIP)

National Library of Medicine's PubMed database (NLM PUBMED)  
National Toxicology Program (NTP)  
New Zealand's Chemical Classification and Information Database (CCID)  
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organization for Economic Co-operation and Development High Production Volume Chemicals Program  
Organization for Economic Co-operation and Development Screening Information Data Set  
World Health Organization

**Issuing Date** 23-May-2023

**Revision Date** 23-May-2023

**Revision Note** Initial Release.

**Disclaimer**

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 given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**