

# SAFETY DATA SHEET

## 1. PRODUCT

### 1.1 Product identifiers

Name: Triirondodecacarbonyl

CAS-No.: 17685-52-8

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

#### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable solids (Category 1), H228


Acute toxicity, Oral (Category 4), H302

Acute toxicity, Inhalation (Category 4), H332

Specific target organ toxicity - single exposure (Category 1), H370

For the full text of the H-Statements mentioned in this Section, see Section 16.

### 2.2 GHS Label elements, including precautionary statements

Pictogram	
Signal word	Danger
Hazard statement(s)	H228 Flammable solid. H302 + H332 Harmful if swallowed or if inhaled H370 Causes damage to organs.
Precautionary statement(s)	P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking. P240 Ground/bond container and receiving equipment. P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment. P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. P264 Wash skin thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P307 + P311 IF exposed: Call a POISON CENTER or doctor/ physician. P321 Specific treatment (see supplemental first aid instructions on this label). P330 Rinse mouth. P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction. P405 Store locked up. P501 Dispose of contents/ container to an approved waste disposal plant.

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

No data available

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Mixtures

Synonyms: tri-Irondodecacarbonyl

Formula:  $C_{12}Fe_3O_{12}$

## Hazardous components

Component	Classification	Concentration
<b>tri-Irondodecacarbonyl</b>		
CAS-No. 17685-52-8 EC-No. 241-668-5	Flam. Sol. 1; Acute Tox. 4; H228, H302 + H332	90 -100 %
<b>Methanol</b>		
CAS-No. 67-56-1 EC-No. 200-659-6	Flam. Liq. 2; Acute Tox. 3; STOT SE 1; H225, H301 + H311 + H331, H370	10 -20 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

<b>General advice</b>
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
<b>If inhaled</b>
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
<b>In case of skin contact</b>
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.
<b>In case of eye contact</b>
Flush eyes with water as a precaution.
<b>If swallowed</b>
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

no data available

## 5. FIREFIGHTING MEASURES

### 5.1 Extinguishing media

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### 5.2 Special hazards arising from the substance or mixture

Carbon oxides, Iron oxides

### 5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

### 5.4 Further information

Use water spray to cool unopened containers.

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Avoid breathing dust.

For personal protection see section 8.

### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

### 6.3 Methods and materials for containment and cleaning up

Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal. Contain spillage, pick up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal according to local regulations (see section 13).

### 6.4 Reference to other sections

For disposal see section 13.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Keep in a dry place.

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Methanol	67-56-1	TWA	200 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Headache Eye damage Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Danger of cutaneous absorption		
		STEL	250 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Headache Eye damage Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Danger of cutaneous absorption		
		TWA	200 ppm 260 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		Potential for dermal absorption		
		ST	250 ppm 325 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		Potential for dermal absorption		
		TWA	200 ppm 260 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) -Table Z-1 Limits for Air Contaminants
		The value in mg/m <sup>3</sup> is approximate.		
		STEL	250 ppm 325 mg/m <sup>3</sup>	USA. OSHA -TABLE Z-1 Limits for Air Contaminants -1910.1000
		Skin notation		
		TWA	200 ppm 260 mg/m <sup>3</sup>	USA. OSHA -TABLE Z-1 Limits for Air Contaminants -1910.1000
		Skin notation		

#### Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Methanol	67-56-1	Methanol	15 mg/l	Urine	ACGIH -Biological Exposure Indices (BEI)
	Remarks	End of shift (As soon as possible after exposure ceases)			

## 8.2 Exposure controls

### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### Personal protective equipment

Eye/face protection	Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Skin protection	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Body Protection	Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Respiratory protection	Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Control of environmental exposure	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Appearance	Form: powder Colour: black
Odour	no data available
Odour Threshold	no data available
pH	no data available
Melting point/freezing point	Melting point/range: 165 °C (329 °F) - lit.
Initial boiling point and boiling range	no data available
Flash point	9.7 °C (49.5 °F) - closed cup
Evaporation rate	no data available
Flammability (solid, gas)	no data available
Upper/lower flammability or explosive limits	no data available
Vapour pressure	no data available
Vapour density	no data available
Relative density	no data available
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Auto-ignition temperature	no data available
Decomposition temperature	no data available
Viscosity	no data available
Explosive properties	no data available
Oxidizing properties	no data available

### 9.2 Other safety information

no data available

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

no data available

## 10.2 Chemical stability

Stable under recommended storage conditions.

## 10.3 Possibility of hazardous reactions

no data available

## 10.4 Conditions to avoid

Heat, flames and sparks. Extremes of temperature and direct sunlight.

## 10.5 Incompatible materials

Strong oxidizing agents

## 10.6 Hazardous decomposition products

Other decomposition products - no data available

In the event of fire: see section 5

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## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

<b>Acute toxicity</b>
no data available Inhalation: no data available Dermal: no data available no data available
<b>Skin corrosion/irritation</b>
no data available
<b>Serious eye damage/eye irritation</b>
no data available
<b>Respiratory or skin sensitisation</b>
no data available
<b>Germ cell mutagenicity</b>
no data available
<b>Carcinogenicity</b>
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH. NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
<b>Reproductive toxicity</b>
no data available no data available
<b>Specific target organ toxicity -single exposure</b>
no data available
<b>Specific target organ toxicity -repeated exposure</b>
no data available
<b>Aspiration hazard</b>
no data available
<b>Additional Information</b>
RTECS: Not available To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Stomach - Irregularities - Based on Human Evidence Stomach - Irregularities - Based on Human Evidence (Methanol)

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

no data available

### 12.2 Persistence and degradability

no data available

### 12.3 Bioaccumulative potential

no data available

### 12.4 Mobility in soil

no data available

### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

### 12.6 Other adverse effects

no data available

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## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

Product
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.
Contaminated packaging
Dispose of as unused product.

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## 14. TRANSPORT INFORMATION

### DOT (US)

UN number: 3175 Class: 4.1 Packing group: II

Proper shipping name: Solids containing flammable liquid, n.o.s. (Methanol, tri-Irondodecacarbonyl)

Reportable Quantity (RQ): 50000 lbs

Marine pollutant: No

Poison Inhalation Hazard: No

### IMDG

UN number: 3175 Class: 4.1 Packing group: II EMS-No: F-A, S-I

Proper shipping name: SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S. (Methanol, tri-Irondodecacarbonyl)

Marine pollutant: No

### IATA

UN number: 3175 Class: 4.1 Packing group: II

Proper shipping name: Solids containing flammable liquid, n.o.s. (Methanol, tri-Irondodecacarbonyl)

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## 15. REGULATORY INFORMATION

### SARA 302 Components

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

## SARA 313 Components

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

Component	CAS-No.	Revision Date
Methanol	67-56-1	2007-07-01

## SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

## Massachusetts Right To Know Components

Component	CAS-No.	Revision Date
Methanol	67-56-1	2007-07-01

## Pennsylvania Right To Know Components

Component	CAS-No.	Revision Date
tri-Irondodecacarbonyl	17685-52-8	
Methanol	67-56-1	2007-07-01

## New Jersey Right To Know Components

Component	CAS-No.	Revision Date
tri-Irondodecacarbonyl	17685-52-8	
Methanol	67-56-1	2007-07-01

## California Prop. 65 Components

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

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

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## 16. OTHER INFORMATION

### Full text of H-Statements referred to under sections 2 and 3.

Acute Tox. Acute toxicity

Flam. Liq. Flammable liquids

Flam. Sol. Flammable solids

H225 Highly flammable liquid and vapour.

H228 Flammable solid.

H301 + H311 +H331 Toxic if swallowed, in contact with skin or if inhaled

H302 Harmful if swallowed.

H302 + H332 Harmful if swallowed or if inhaled

H332 Harmful if inhaled.

H370 Causes damage to organs.

STOT SE Specific target organ toxicity - single exposure

### HMIS Rating

Health hazard: 2

Chronic Health Hazard: \*

Flammability: 3

Physical Hazard 3

### NFPA Rating

Health hazard: 2

Fire Hazard: 3

Reactivity Hazard: 3

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