VanDeMark
Phosgene Chemistry – Custom Chemicals

SAFETY DATA SHEET

1. Identification

GHS product identifier	**2-Carbomethoxybenzenesulfonyl Isocyanate Solution in Xylene**
Version #	01
Issue date	06-September-2016
Revision date	-
Supersedes date	-
CAS #	Mixture
Recommended use	Intermediate.
Recommended Restrictions	Not available.

Manufacturer

Company name	VanDeMark Chemical Inc.
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Telephone	716-433-6764
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Emergency telephone	CHEMTREC 1-800-424-9300 (North America) +1-703-527-3887 (International)

2. Hazards identification

GHS classification

Physical hazards	Flammable liquids	Category 3
Health hazards	Acute toxicity, oral	Category 4
	Acute toxicity, dermal	Category 4
	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
	Sensitization, respiratory	Category 1
	Sensitization, skin	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Specific target organ toxicity, repeated exposure	Category 2 (central nervous system, liver, kidney)
	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 2

GHS label elements

Signal word

Danger

Hazard statement

Flammable liquid and vapor. Harmful if swallowed. Harmful in contact with skin. Harmful if inhaled. Causes severe skin burns and eye damage. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. May cause respiratory irritation. May cause drowsiness or dizziness. May cause damage to organs (central nervous system, liver, kidney) through prolonged or repeated exposure. May be fatal if swallowed and enters airways. Toxic to aquatic life.

Precautionary statement

Prevention	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection. Wear respiratory protection.
Response	IF SWALLOWED: Immediately call a POISON CENTER/doctor. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. 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/doctor. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. In case of fire: Use appropriate media to extinguish.
Storage	Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards which do not result in classification	Material reacts with water.
Supplemental information	None.

3. Composition/information on ingredients

Components	CAS #	Percent
Xylene	1330-20-7	60-75
Methyl 2-(isocyanatosulphonyl)benzoate	74222-95-0	25-40

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First aid measures

First aid procedures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
Skin	Remove contaminated clothing immediately and wash skin with soap and water. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms and effects, both acute and delayed	Dizziness. Nausea, vomiting. Abdominal pain. Burning pain and severe corrosive skin damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Difficulty in breathing.
Notes to physician	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General advice	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Material reacts with water. Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.
Protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Protection of fire-fighters	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.

6. Accidental release measures

Personal precautions

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

Methods for containment

Use water spray to reduce vapors or divert vapor cloud drift. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools. Stop the flow of material, if this is without risk.

Methods for cleaning up

Ventilate the contaminated area. Wear appropriate protective equipment and clothing during clean-up. This product is miscible in water. Prevent product from entering drains. Do not allow material to contaminate ground water system.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

7. Handling and storage

Handling

Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Persons already sensitized to diisocyanates may develop allergic reactions when using this product. Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.

Storage

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Protect from moisture. Store in original tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls / personal protection

Control parameters

US. ACGIH Threshold Limit Values

Components	Type	Value
Xylene (CAS 1330-20-7)	STEL	150 ppm
	TWA	100 ppm

Recommended monitoring procedures

Follow standard monitoring procedures.

Engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles) and a face shield. Face shield is recommended.

Skin protection

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

Wear positive pressure self-contained breathing apparatus (SCBA).

Hand protection

Wear appropriate chemical resistant gloves. Nitrile or butyl rubber gloves are recommended. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.

9. Physical and chemical properties

Appearance

Physical state	Liquid.
Color	Clear to yellow.
Form	Liquid.
Odor	Aromatic. Acrid.
Odor threshold	Not available.
pH	Not applicable.
Melting point/Freezing point	Not available.
Boiling point	291.2 °F (144 °C)
Flash point	84.2 °F (29.0 °C)
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Flammability limits in air, lower, % by volume	Not available.
Flammability limits in air, upper, % by volume	Not available.
Vapor pressure	38 mm Hg (20 °C)
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Reacts with water.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	923 °F (495 °C)
Decomposition temperature	Not available.
Viscosity	Not available.
VOC (Weight %)	70 %
Other data	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport. Material reacts with water.
Chemical stability	Material is stable under normal conditions. Water reactive material.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Water, moisture. Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong acids. Strong bases. Water. Alcohols. Amines.
Hazardous decomposition products	Thermal decomposition can lead to release of irritating gases and vapors. Carbon oxides. Sulfur oxides. Aromatic sulfonamide.

11. Toxicological information

Toxicological data

Components	Species	Test Results
Methyl 2-(isocyanatosulphonyl)benzoate (CAS 74222-95-0)		
Acute		
Dermal		
LD50	Rat	500 mg/kg
Oral		
LD50	Rat	350 mg/kg

Components	Species	Test Results
Xylene (CAS 1330-20-7)		
Acute		
Oral		
LD50	Rat	3523 mg/kg

Routes of exposure Inhalation. Ingestion. Skin contact. Eye contact.

Toxicological information Occupational exposure to the substance or mixture may cause adverse effects.

Acute toxicity Harmful if swallowed, in contact with skin or if inhaled.

Skin corrosion/irritation Causes severe skin burns and eye damage.

Serious eye damage/eye irritation Causes serious eye damage.

Respiratory sensitizer May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin sensitization May cause an allergic skin reaction.

Mutagenicity Based on available data, the classification criteria are not met.

Carcinogenicity Based on available data, the classification criteria are not met.

ACGIH Carcinogens

Xylene (CAS 1330-20-7) A4 Not classifiable as a human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

Xylene (CAS 1330-20-7) 3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity Based on available data, the classification criteria are not met.

Specific target organ toxicity - single exposure May cause respiratory irritation. Vapors may cause drowsiness and dizziness.

Specific target organ toxicity - repeated exposure May cause damage to organs (central nervous system, liver, kidney) through prolonged or repeated exposure.

Aspiration hazard May be fatal if swallowed and enters airways. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

Chronic effects Prolonged exposure may cause chronic effects.

Teratogenicity No data available.

Symptoms Dizziness. Nausea, vomiting. Abdominal pain. Burning pain and severe corrosive skin damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Difficulty in breathing.

Other information Causes respiratory tract burns. Causes digestive tract burns. The product contains components which may penetrate skin.

12. Ecological information

Ecotoxicological data

Components		Species	Test Results
Xylene (CAS 1330-20-7)			
Aquatic			
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	2.6 mg/l, 96 hours

Ecotoxicity Toxic to aquatic life with long lasting effects.

Persistence / degradability No data is available on the degradability of this product.

Bioaccumulation

Bioaccumulative potential

Octanol/water partition coefficient log Kow

Xylene (CAS 1330-20-7) 3.2

Mobility Water reactive material.

Other adverse effects The product contains volatile substances, which may spread in the atmosphere.

13. Disposal considerations

Disposal methods Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

ADR

UN number	3080
UN proper shipping name	ISOCYANATE TOXIC, FLAMMABLE,N.O.S. (Xylene, Methyl 2-(isocyanatosulphonyl)benzoate)
Transport hazard class(es)	
Class	6
Subsidiary risk	-
Label(s)	3
Hazard No. (ADR)	30
Tunnel restriction code	D/E
Packing group	III
Environmental hazards	No.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

RID

UN number	3080
UN proper shipping name	ISOCYANATE TOXIC, FLAMMABLE, N.O.S. (Xylene, Methyl 2-(isocyanatosulphonyl)benzoate)
Transport hazard class(es)	
Class	6
Subsidiary risk	-
Label(s)	3
Packing group	III
Environmental hazards	No.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number	3080
UN proper shipping name	ISOCYANATE TOXIC, FLAMMABLE, N.O.S. (Xylene, Methyl 2-(isocyanatosulphonyl)benzoate)
Transport hazard class(es)	
Class	6
Subsidiary risk	-
Label(s)	3
Packing group	III
Environmental hazards	No.
ERG Code	3L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	3080
UN proper shipping name	ISOCYANATE TOXIC, FLAMMABLE, N.O.S. (Xylene, Methyl 2-(isocyanatosulphonyl)benzoate)
Transport hazard class(es)	
Class	6
Subsidiary risk	-
Label(s)	3
Packing group	III
Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	This substance/mixture is not intended to be transported in bulk.

15. Regulatory information

Regulatory information	This material safety data sheet was prepared in accordance with "Globally Harmonized System of Classification and Labelling of Chemicals (GHS)".

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

Disclaimer

This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.

List of abbreviations

STEL: Short term exposure limit.
TWA: Time weighted average.
LD50: Lethal Dose, 50%.
LC50: Lethal Concentration, 50%.