Safety Data Sheet

Section 1: Identification

Product identifier

Product Name • **EDC Intermediate Feedstock**

Synonyms • Crude EDC; IFS, Intermediate EDC Product; Catoxid Feed

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

Recommended use • Chemical Intermediate

Details of the supplier of the safety data sheet

Manufacturer • Westlake Vinyls Company, LP
P.O. Box 228
36045 Highway 30, Geismar, LA 70734
United States
www.westlake.com

Telephone (General) • 225-673-0651

Emergency telephone number

Manufacturer • (800) 424-9300 - Chemtrec - Transportation emergency

Section 2: Hazard Identification

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

Classification of the substance or mixture

OSHA HCS 2012 • Flammable Liquids 3
Acute Toxicity Oral 4
Skin Irritation 2
Eye Irritation 2
Acute Toxicity Inhalation 2
Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation
Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects
Carcinogenicity 1A
Reproductive Toxicity 1B
Specific Target Organ Toxicity Single Exposure 1
Specific Target Organ Toxicity Repeated Exposure 1
Specific Target Organ Toxicity Repeated Exposure 2

Label elements

OSHA HCS 2012

DANGER

Hazard statements

- Flammable liquid and vapour
- Harmful if swallowed
- Causes skin irritation
- Causes serious eye irritation
- Fatal if inhaled
- May cause respiratory irritation
- May cause drowsiness or dizziness
- May cause cancer.
- May damage fertility or the unborn child.
- Causes damage to organs.
- Causes damage to organs through prolonged or repeated exposure.
- May cause damage to organs through prolonged or repeated exposure.

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 and/or hot surfaces. - No smoking.
- Keep container tightly closed.
- Ground and/or bond container and receiving equipment.
- Use explosion-proof electrical/ventilating/lighting/equipment.
- Use only non-sparking tools.
- Take precautionary measures against static discharge.
- Do not breathe mists, vapours, and/or spray.
- Wash thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Use only outdoors or in a well-ventilated area.
- Wear protective gloves/protective clothing/eye protection/face protection.
- Wear respiratory protection.
- In case of inadequate ventilation wear respiratory protection.

Response

- In case of fire: Use appropriate media for extinction.
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- Immediately call a POISON CENTER or doctor/physician.
- If on skin: Wash with plenty of water .
- Take off contaminated clothing and wash before reuse.
- Specific treatment, see supplemental first aid information.
- If skin irritation occurs: Get medical advice/attention.
- 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.
- IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician if you feel unwell.
- Rinse mouth.
- IF exposed: Call POISON CENTER or doctor/physician.
- Get medical advice/attention if you feel unwell.

Storage/Disposal

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

Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Supplemental information

- 3.2 - 16 percent of this product consists of an ingredient of unknown toxicity.

Other hazards

OSHA HCS 2012

- Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

Section 3 - Composition/Information on Ingredients

Substances

- Material does not meet the criteria of a substance.

Mixtures

Composition					
Chemical Name	**Identifiers**	**%**	**LD50/LC50**	**Classifications According to Regulation/Directive**	**Comments**
Carbon tetrachloride	**CAS:**56-23-5	2% TO 50%	Ingestion/Oral-Rat LD50 • 2350 mg/kg Inhalation-Rat LC50 • 8000 ppm 4 Hour(s) Skin-Rabbit LD50 • >20 g/kg	**OSHA HCS 2012:** Acute Tox. 4 (inhl); Eye Irrit. 2; STOT RE 2 (Liver, Orl, Inhl); Carc. 2; Repr. 1B	NDA
Ethane, 1,1,2-trichloro-	**CAS:**79-00-5	9% TO 43%	Skin-Rabbit LD50 • 3730 µL/kg Ingestion/Oral-Rat LD50 • 580 mg/kg	**OSHA HCS 2012:** Acute Tox. 4 (orl); Skin Irrit. 2; Eye Irrit. 2; STOT SE 3: Narc.	NDA
Ethane, 1,2-dichloro-	**CAS:**107-06-2	4% TO 38%	Inhalation-Rat LC50 • 1000 ppm 7 Hour(s) Skin-Rabbit LD50 • 2800 mg/kg Ingestion/Oral-Rat LD50 • 500 mg/kg	**OSHA HCS 2012:** Flam. Liq. 2; STOT RE 1 (Kidney & Liver, Orl); Skin Irrit. 2; Eye Irrit. 2; Carc. 2; Acute Tox. 4 (orl); STOT SE 3: Narc. & Resp. Irrit.	NDA
Chloroform	**CAS:**67-66-3	1% TO 29%	Inhalation-Rat LC50 • 6000 mg/m³ 6 Hour(s) Ingestion/Oral-Rat LD50 • 300 mg/kg Skin-Rabbit LD50 • >20 g/kg	**OSHA HCS 2012:** Carc. 2; Acute Tox. 3 (orl); Eye Irrit. 2; STOT RE 2 (Liver & Kidneys); STOT SE 1 (Liver); STOT SE 3, Narc. & Resp. Irrit.	NDA
Dichlorobutene	**CAS:**31423-92-4	3% TO 21%	NDA	**OSHA HCS 2012:** Not Classified	NDA
Butene, trichloro-	**CAS:**51023-22-4	3% TO 13%	NDA	**OSHA HCS 2012:** Acute Tox. 1 (inhl)	NDA
Ethylene, tetrachloro-	**CAS:**127-18-4	0.6% TO 11%	Ingestion/Oral-Rat LD50 • 2629 mg/kg Inhalation-Rat LC50 • 4100 ppm 6 Hour(s)	**OSHA HCS 2012:** Skin Irrit. 2; Eye Irrit. 2; STOT SE 3: Resp. Irrit.; STOT SE 3: Narc.; Muta. 2; Carc. 1B; Repr. 2; STOT RE 1 (Liver & Kidney); Acute Tox. 4 (inhl)	NDA
Ethane, 1,1,2,2-tetrachloro-	**CAS:**79-34-5	0.5% TO 10%	Ingestion/Oral-Rat LD50 • 200 mg/kg Inhalation-Rat LC50 • 8600 mg/m³ 4 Hour(s)	**OSHA HCS 2012:** STOT SE 3 (Narc. & Resp. Irrit.); Eye Irrit. 2; Skin Irrit. 2; Acute Tox. 3 (oral, inhl); STOT RE 1 (Liver); Carc. 2	NDA
Benzene, 1,2,4,5-tetrachloro-	**CAS:**95-94-3	0% TO 6%	NDA	**OSHA HCS 2012:** Acute Tox. 4 (orl)	NDA
Ethane, 1,1-	**CAS:**75-34-3	0.3%	Ingestion/Oral-Rat	**OSHA HCS 2012:** Flam. Liq. 2; STOT SE 3: Narc.;	NDA

dichloro-		TO 4%	LD50 • 725 mg/kg Inhalation-Rat LC50 • 13000 ppm 4 Hour(s)	STOT RE 1 (Kidney & Liver); Acute Tox. 4 (Orl)	
Benzene, chloro-	**CAS:**108-90-7	0.4% TO 3%	Inhalation-Rat LC50 • 2965 ppm Ingestion/Oral-Rat LD50 • 500 mg/kg Skin-Rabbit LD50 • >7940 mg/kg	**OSHA HCS 2012:** Flam. Liq. 3; Asp. Tox. 1; STOT SE 3: Narc.; Acute Tox. 4 (orl); STOT RE 2 (Liver, Kidney)	NDA
1,3-Butadiene, 2-chloro-	**CAS:**126-99-8	0% TO 3%	NDA	**OSHA HCS 2012:** Flam. Liq. 2; Carc. 1B; Acute Tox. 3 (orl); Skin Irrit. 2; Repr. 2; Muta. 2; STOT RE 2 (Liver)	NDA
Vinyl Chloride	**CAS:**75-01-4	0.1% TO 2%	Ingestion/Oral-Rat LD50 • 500 mg/kg Inhalation-Rat LC50 • 18 pph 15 Minute(s)	**OSHA HCS 2012:** Flam. Gas 1; Press. Gas - Liq.; Carc. 1A; Repr. 1B; Acute Tox. 4 (orl)	NDA
Ethylene, 1,2-dichloro-	**CAS:**540-59-0	0% TO 2%	NDA	**OSHA HCS 2012:** Flam. Liq. 3; STOT SE 3: Narc.; Acute Tox. 4 (orl); Skin Irrit. 2	NDA
Ethane, chloro-	**CAS:**75-00-3	0.1% TO 2%	Inhalation-Rat LC50 • 150000 mg/m³ 2 Hour(s)	**OSHA HCS 2012:** Flam. Gas. 1; Press. Gas; STOT SE 3: Narc.; STOT RE 2 (Liver)	NDA
Benzene, 1,2,4-trichloro-	**CAS:**120-82-1	0.1% TO 2%	Ingestion/Oral-Rat LD50 • 756 mg/kg	**OSHA HCS 2012:** Skin Irrit. 2; STOT SE 3: Resp. Irrit.; STOT RE 2 (Kidney, Liver & Lung, Inhl); Acute Tox. 4 (orl)	NDA

Section 4: First-Aid Measures

Description of first aid measures

Inhalation
- Move victim to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. Get medical attention.

Skin
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin. Wash the contaminated area of body with soap and fresh water. Remove and isolate contaminated clothing. If irritation develops and persists, get medical attention.

Eye
- Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. If eye irritation persists: Get medical advice/attention.

Ingestion
- Do NOT induce vomiting. Get medical attention immediately.

Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

Indication of any immediate medical attention and special treatment needed

Notes to Physician
- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Section 5: Fire-Fighting Measures

Extinguishing media

Suitable Extinguishing Media
- Use ABC dry chemical, foam or carbon dioxide.

Unsuitable Extinguishing Media
- Water may be ineffective but water should be used to keep fire exposed containers cool.

Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards
- Containers may explode when heated.
  Vapor explosion hazard indoors, outdoors or in sewers.

HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.
Many liquids are lighter than water.
Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
Runoff to sewer may create fire or explosion hazard.
Vapors may form explosive mixtures with air.
Vapors may travel to source of ignition and flash back.

Hazardous Combustion Products

- Phosgene and HCl are generated when material is burned.

Advice for firefighters

- Structural firefighters' protective clothing will only provide limited protection.
Wear positive pressure self-contained breathing apparatus (SCBA).
Move containers from fire area if you can do it without risk.
LARGE FIRES: Cool containers with flooding quantities of water until well after fire is out.

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Personal Precautions

- CAUTION: Victim may be a source of contamination. Do not walk through spilled material. Wear appropriate personal protective equipment, avoid direct contact. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Emergency Procedures

- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions. LARGE SPILL: Consider initial downwind evacuation for at least 300 meters (1000 feet) ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

Environmental precautions

- Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Containment/Clean-up Measures

- Stop leak if you can do it without risk.
Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
Use clean non-sparking tools to collect absorbed material.
A vapor suppressing foam may be used to reduce vapors.
All equipment used when handling the product must be grounded.
LARGE SPILLS: Dike far ahead of liquid spill for later disposal.
LARGE SPILLS: Water spray may reduce vapor; but may not prevent ignition in closed spaces.

Section 7 - Handling and Storage

Precautions for safe handling

Handling

- Use only with adequate ventilation. Keep away from heat, sparks, and flame. All equipment used when handling the product must be grounded. Take precautionary measures against static charges. Empty containers retain product residue and can be hazardous. Do not cut, weld, puncture or incinerate container. Wear appropriate personal protective equipment, avoid direct contact. Do not breathe mist, vapours and/or spray. Avoid contact with skin, eyes, and clothing. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

Conditions for safe storage, including any incompatibilities

Storage • Keep away from sources of ignition - No Smoking. Keep container/package tightly closed in a cool, well-ventilated place.

Section 8 - Exposure Controls/Personal Protection

Control parameters

Exposure Limits/Guidelines				
	Result	**ACGIH**	**NIOSH**	**OSHA**
1,3-Butadiene, 2-chloro- (126-99-8)	TWAs	10 ppm TWA	Not established	25 ppm TWA; 90 mg/m3 TWA
	Ceilings	Not established	1 ppm Ceiling (15 min); 3.6 mg/m3 Ceiling (15 min)	Not established
Ethylene, 1,2-dichloro- (540-59-0)	TWAs	200 ppm TWA	200 ppm TWA; 790 mg/m3 TWA	200 ppm TWA; 790 mg/m3 TWA
Vinyl Chloride (75-01-4)	STELs	Not established	Not established	5 ppm STEL (see 29 CFR 1910.1017)
	TWAs	1 ppm TWA	Not established	1 ppm TWA
Ethane, chloro- (75-00-3)	TWAs	100 ppm TWA	Not established	1000 ppm TWA; 2600 mg/m3 TWA
Benzene, 1,2,4-trichloro- (120-82-1)	Ceilings	5 ppm Ceiling	5 ppm Ceiling; 40 mg/m3 Ceiling	Not established
Ethane, 1,1-dichloro- (75-34-3)	TWAs	100 ppm TWA	100 ppm TWA; 400 mg/m3 TWA	100 ppm TWA; 400 mg/m3 TWA
Benzene, chloro- (108-90-7)	TWAs	10 ppm TWA	Not established	75 ppm TWA; 350 mg/m3 TWA
Ethane, 1,1,2,2-tetrachloro- (79-34-5)	TWAs	1 ppm TWA	1 ppm TWA; 7 mg/m3 TWA	5 ppm TWA; 35 mg/m3 TWA
Ethylene, tetrachloro- (127-18-4)	Ceilings	Not established	Not established	200 ppm Ceiling
	TWAs	25 ppm TWA	Not established	100 ppm TWA
	STELs	100 ppm STEL	Not established	Not established
Chloroform (67-66-3)	Ceilings	Not established	Not established	50 ppm Ceiling; 240 mg/m3 Ceiling
	TWAs	10 ppm TWA	Not established	Not established
	STELs	Not established	2 ppm STEL (60 min); 9.78 mg/m3 STEL (60 min)	Not established
Carbon tetrachloride (56-23-5)	Ceilings	Not established	Not established	25 ppm Ceiling
	TWAs	5 ppm TWA	Not established	10 ppm TWA
	STELs	10 ppm STEL	2 ppm STEL (60 min); 12.6 mg/m3 STEL (60 min)	Not established
Ethane, 1,2-dichloro- (107-06-2)	Ceilings	Not established	Not established	100 ppm Ceiling
	TWAs	10 ppm TWA	1 ppm TWA; 4 mg/m3 TWA	50 ppm TWA
	STELs	Not established	2 ppm STEL; 8 mg/m3 STEL	Not established
Ethane, 1,1,2-trichloro- (79-00-5)	TWAs	10 ppm TWA	10 ppm TWA; 45 mg/m3 TWA	10 ppm TWA; 45 mg/m3 TWA

Exposure controls

Engineering Measures/Controls • Good general ventilation 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. Use only appropriately classified electrical equipment.

Personal Protective Equipment

Respiratory	• In case of insufficient ventilation, wear suitable respiratory equipment. Follow the OSHA respirator regulations found in 29 CFR 1910.134. Use a NIOSH/MSHA approved respirator if exposure limits are exceeded or symptoms are experienced.
Eye/Face	• Wear safety goggles.
Skin/Body	• Wear appropriate gloves.
Environmental Exposure Controls	• Follow best practice for site management and disposal of waste. Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene
NIOSH = National Institute of Occupational Safety and Health
OSHA = Occupational Safety and Health Administration
STEL = Short Term Exposure Limits are based on 15-minute exposures
TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

Section 9 - Physical and Chemical Properties

Information on Physical and Chemical Properties

Material Description			
Physical Form	Liquid	Appearance/Description	Black liquid with a sweet, pungent odor.
Color	Black	Odor	Sweet, pungent.
Odor Threshold	No data available		
General Properties			
Boiling Point	No data available	Melting Point/Freezing Point	No data available
Decomposition Temperature	No data available	pH	6 to 8
Specific Gravity/Relative Density	= 1.358 Water=1	Water Solubility	Slightly Soluble
Viscosity	No data available		
Volatility			
Vapor Pressure	1.95 psia @ 100 F(37.7778 C)	Vapor Density	1 to 3.4 Air=1
Evaporation Rate	No data available	Volatiles (Wt.)	100 %
Volatiles (Vol.)	100 %		
Flammability			
Flash Point	< 100 F(< 37.7778 C)	UEL	33 %
LEL	3.6 %	Autoignition	No data available
Flammability (solid, gas)	No data available		
Environmental			
Octanol/Water Partition coefficient	No data available		

Section 10: Stability and Reactivity

Reactivity

• No dangerous reaction known under conditions of normal use.

Chemical stability

• Stable under normal temperatures and pressures.

Possibility of hazardous reactions

• Hazardous polymerization will not occur.

Conditions to avoid

• Heat, sparks, open flame.

Incompatible materials

- Reacts with strong, oxidizing agents such as hydrogen peroxide, permanganates and perchlorates. Depending on the amount and specific material involved, contact can result in intense heat, boiling, flame development, explosion or toxic gas generation.

Hazardous decomposition products

- CO, CO2, Hydrogen Chloride and aromatic and chlorinated hydrocarbons.

Section 11 - Toxicological Information

Information on toxicological effects

Components		
Vinyl Chloride (0.1% TO 2%)	75-01-4	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 500 mg/kg; **Multi-dose Toxicity:** Inhalation-Rat TCLo • 30 mg/m³ 4 Hour(s) 20 Day(s)-Intermittent; *Cardiac*:**EKG changes not diagnostic of above**; **Mutagen:** DNA damage • Inhalation-Rat • 205 ppm 5 Hour(s); **Reproductive:** Inhalation-Rat TCLo • 500 ppm 7 Hour(s)(6-15D preg); *Reproductive Effects:Effects on Embryo or Fetus*:**Fetotoxicity (except death, e.g., stunted fetus)**; *Reproductive Effects:Specific Developmental Abnormalities*:**Musculoskeletal system**; **Tumorigen / Carcinogen:** Inhalation-Rat TCLo • 10000 ppm 4 Hour(s); *Tumorigenic*:**Carcinogenic by RTECS criteria**; *Reproductive Effects:Tumorigenic Effects*:**Transplacental tumorigenesis**; *Endocrine*:**Tumors**
Ethane, chloro- (0.1% TO 2%)	75-00-3	**Acute Toxicity:** Inhalation-Rat LC50 • 152 g/m³ 2 Hour(s); *Brain and Coverings*:**Other degenerative changes**; *Behavioral*:**General anesthetic**; *Blood*:**Hemorrhage**; **Multi-dose Toxicity:** Inhalation-Rat TCLo • 570 mg/m³ 4 Hour(s) 26 Week(s)-Intermittent; *Liver*:**Liver function tests impaired**; *Immunological Including Allergic*:**Decrease in cellular immune response**; *Nutritional and Gross Metabolic:Gross Metabolite Changes*:**Weight loss or decreased weight gain**; **Reproductive:** Inhalation-Rat TCLo • 60 mg/m³ 4 Hour(s)(26W male); *Reproductive Effects:Paternal Effects*:**Spermatogenesis**; **Tumorigen / Carcinogen:** Inhalation-Mouse TCLo • 15000 ppm 6 Hour(s) 2 Year(s)-Intermittent; *Tumorigenic*:**Carcinogenic by RTECS criteria**; *Liver*:**Tumors**; *Reproductive Effects:Tumorigenic Effects*:**Uterine tumors**
Ethylene, 1,2-dichloro- (0% TO 2%)	540-59-0	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 770 mg/kg; **Irritation:** Skin-Rabbit • 100 mg 24 Hour(s) • Moderate irritation; **Multi-dose Toxicity:** Ingestion/Oral-Mouse TDLo • 9 mg/kg 90 Day(s)-Intermittent; *Liver*:**Other changes**; *Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels*:**Hepatic microsomal mixed oxidase (dealkylation, hydroxylation, etc.)**
Ethane, 1,1-dichloro- (0.3% TO 4%)	75-34-3	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 725 mg/kg; Inhalation-Rat LC50 • 13000 ppm 4 Hour(s); **Reproductive:** Inhalation-Rat TCLo • 6000 ppm 7 Hour(s)(6-15D preg); *Reproductive Effects:Specific Developmental Abnormalities*:**Musculoskeletal system**; **Tumorigen / Carcinogen:** Ingestion/Oral-Mouse TDLo • 185 g/kg 78 Week(s)-Intermittent; *Tumorigenic*:**Equivocal tumorigenic agent by RTECS criteria**; *Reproductive Effects:Tumorigenic Effects*:**Uterine tumors**
Chloroform (1% TO 29%)	67-66-3	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 695 mg/kg; *Behavioral*:**Changes in motor activity (specific assay)**; *Behavioral*:**Ataxia**; *Lungs, Thorax, or Respiration*:**Respiratory stimulation**; Ingestion/Oral-Rat TDLo • 14.9 mg/kg; *Liver*:**Liver function tests impaired**; Inhalation-Rat LC50 • 47702 mg/m³ 4 Hour(s); Inhalation-Human TCLo • 5000 mg/m³ 7 Minute(s); *Behavioral*:**Hallucinations, distorted perceptions**; Skin-Rabbit LD50 • >20 g/kg; **Irritation:** Eye-Rabbit • 20 mg 24 Hour(s) • Moderate irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Mild irritation; **Multi-dose Toxicity:** Ingestion/Oral-Mouse TDLo • 560 mg/kg 4 Day(s)-Intermittent; *Liver*:**Hepatitis (hepatocellular necrosis), diffuse**; *Kidney, Ureter, and Bladder*:**Changes in tubules (including acute renal failure, acute tubular necrosis)**; *Kidney, Ureter, and Bladder*:**Other changes**; **Mutagen:** Micronucleus test • Ingestion/Oral-Rat • 4 mmol/kg; Cytogenetic analysis • Ingestion/Oral-Rat • 597 mg/kg 5 Day(s)-Intermittent; Sister chromatid exchange • Inhalation-Mouse • 300 ppm 6 Hour(s); **Reproductive:** Ingestion/Oral-Rabbit TDLo • 260 mg/kg (6-18D preg); *Reproductive Effects:Effects on Embryo or Fetus*:**Fetotoxicity (except death, e.g., stunted fetus)**; *Reproductive Effects:Specific Developmental Abnormalities*:**Musculoskeletal system**; Inhalation-Rat TCLo • 30 ppm 7 Hour(s)(6-15D preg); *Reproductive Effects:Effects on Fertility*:**Other measures of fertility**; *Reproductive Effects:Effects on Embryo or Fetus*:**Fetotoxicity (except death, e.g., stunted fetus)**; *Reproductive Effects:Specific Developmental Abnormalities*:**Musculoskeletal system**; **Tumorigen / Carcinogen:** Ingestion/Oral-Rat TDLo • 48 g/kg 16 Week(s)-Intermittent; *Tumorigenic*:**Equivocal tumorigenic agent by RTECS criteria**; *Kidney, Ureter, and Bladder*:**Kidney tumors**; *Tumorigenic*:**Increased incidence of tumors in susceptible strains**
Ethane, 1,2-dichloro- (4% TO	107-06-2	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 500 mg/kg; Inhalation-Rat LC50 • 1000 ppm 7 Hour(s); *Behavioral*:**Coma**; *Lungs, Thorax, or Respiration*:**Cyanosis**; *Nutritional and Gross Metabolic:Changes in*

38%)		*Chemistry or Temperature*:**Body temperature decrease**; Inhalation-Rat LC50 • 5100 mg/m³ 6 Hour(s); **Irritation:** Eye-Rabbit • 500 mg 24 Hour(s) • Mild irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Mild irritation; **Tumorigen / Carcinogen:** Inhalation-Rat TCLo • 5 ppm 7 Hour(s) 78 Week(s)-Intermittent; *Tumorigenic*:**Equivocal tumorigenic agent by RTECS criteria**; *Blood*:**Leukemia**; *Skin and Appendages:Other*:**Tumors**
Carbon tetrachloride (2% TO 50%)	56-23-5	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 2350 mg/kg; Ingestion/Oral-Rat TDLo • 0.66 mg/kg; *Liver*:**Hepatitis (hepatocellular necrosis), zonal**; *Blood*:**Changes in serum composition (e.g., TP, bilirubin cholesterol)**; *Biochemical:Metabolism (intermediary)*:**Lipids, including transport**; Inhalation-Rat LC50 • 8000 ppm 4 Hour(s); **Irritation:** Eye-Rabbit • 500 mg 24 Hour(s) • Mild irritation; Skin-Rabbit • 4 mg • Mild irritation; **Multi-dose Toxicity:** Ingestion/Oral-Rat TDLo • 4.8 mL/kg 6 Day(s) 8 Week(s)-Intermittent; *Liver*:**Hepatitis, fibrous (cirrhosis, post-necrotic scarring)**; *Liver*:**Liver function tests impaired**; *Kidney, Ureter, and Bladder*:**Changes in both tubules and glomeruli**; Inhalation-Rabbit TCLo • 515 mg/m³ 8 Hour(s) 6 Week(s)-Intermittent; *Liver*:**Fatty liver degeneration**; **Reproductive:** Inhalation-Rat TCLo • 300 ppm 7 Hour(s)(6-15D preg); *Reproductive Effects:Effects on Embryo or Fetus*:**Fetotoxicity (except death, e.g., stunted fetus)**; *Reproductive Effects:Specific Developmental Abnormalities*:**Musculoskeletal system**; *Reproductive Effects:Specific Developmental Abnormalities*:**Homeostasis**; **Tumorigen / Carcinogen:** Inhalation-Rat TCLo • 25 ppm 6 Hour(s) 6 Week(s)-Intermittent; *Tumorigenic*:**Equivocal tumorigenic agent by RTECS criteria**; *Liver*:**Tumors**; *Tumorigenic*:**Facilitates action of known carcinogen**
Ethane, 1,1,2-trichloro- (9% TO 43%)	79-00-5	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 580 mg/kg; Inhalation-Rat LCLo • 500 ppm 4 Hour(s); Skin-Rabbit LD50 • 3730 µL/kg; **Irritation:** Eye-Rabbit • 162 mg • Mild irritation; Skin-Rabbit • 810 mg 24 Hour(s) • Severe irritation; **Multi-dose Toxicity:** Ingestion/Oral-Mouse TDLo • 532 mg/kg 14 Day(s)-Intermittent; *Brain and Coverings*:**Changes in brain-weight**; *Endocrine*:**Changes in thymus weight**; *Related to Chronic Data*:**Changes in testicular weight**; **Mutagen:** Cytogenetic analysis • Skin-Guinea Pig • 2880 µg/kg; **Tumorigen / Carcinogen:** Ingestion/Oral-Mouse TDLo • 76 g/kg 78 Week(s)-Intermittent; *Tumorigenic*:**Carcinogenic by RTECS criteria**; *Liver*:**Tumors**; *Endocrine*:**Adrenal cortex tumors**
Ethylene, tetrachloro- (0.6% TO 11%)	127-18-4	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 2629 mg/kg; Ingestion/Oral-Dog TDLo • 306 mg/kg; *Cardiac*:**Other changes**; *Lungs, Thorax, or Respiration*:**Other changes**; *Liver*:**Fatty liver degeneration**; Ingestion/Oral-Mouse TDLo • 500 mg/kg; *Liver*:**Hepatitis (hepatocellular necrosis), zonal**; *Liver*:**Fatty liver degeneration**; Inhalation-Rat LC50 • 4100 ppm 6 Hour(s); **Irritation:** Eye-Rabbit • 500 mg 24 Hour(s) • Mild irritation; Skin-Rabbit • 810 mg 24 Hour(s) • Severe irritation; **Multi-dose Toxicity:** Ingestion/Oral-Rat TDLo • 7000 mg/kg 7 Day(s)-Intermittent; *Kidney, Ureter, and Bladder*:**Changes in tubules (including acute renal failure, acute tubular necrosis)**; **Mutagen:** Sperm Morphology • Inhalation-Mouse • 500 ppm; Cytogenetic analysis • Inhalation-Rat • 500 ppm; **Reproductive:** Inhalation-Mouse TCLo • 300 ppm 7 Hour(s)(6-15D preg); *Reproductive Effects:Effects on Embryo or Fetus*:**Fetotoxicity (except death, e.g., stunted fetus)**; *Reproductive Effects:Specific Developmental Abnormalities*:**Musculoskeletal system**; *Reproductive Effects:Specific Developmental Abnormalities*:**Homeostasis**; Inhalation-Rat TCLo • 250 ppm (6-19D preg); *Reproductive Effects:Effects on Embryo or Fetus*:**Extra embryonic structures**; *Reproductive Effects:Effects on Embryo or Fetus*:**Fetotoxicity (except death, e.g., stunted fetus)**; **Tumorigen / Carcinogen:** Inhalation-Rat TCLo • 200 ppm 6 Hour(s) 2 Year(s)-Intermittent; *Tumorigenic*:**Carcinogenic by RTECS criteria**; *Blood*:**Leukemia**; *Reproductive Effects:Tumorigenic Effects*:**Testicular tumors**
Ethane, 1,1,2,2-tetrachloro- (0.5% TO 10%)	79-34-5	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 200 mg/kg; Inhalation-Rat LC50 • 8600 mg/m³ 4 Hour(s); *Liver*:**Other changes**; **Irritation:** Eye-Rabbit • 0.1 mL; Skin-Rabbit • 0.01 mL • Severe irritation; **Multi-dose Toxicity:** Ingestion/Oral-Rat TDLo • 2184 mg/kg 3 Week(s)-Intermittent; *Liver*:**Changes in liver weight**; *Kidney, Ureter, and Bladder*:**Changes in tubules (including acute renal failure, acute tubular necrosis)**; Inhalation-Rat TCLo • 50 mg/m³ 4 Hour(s) 6 Week(s)-Intermittent; *Brain and Coverings*:**Recordings from specific areas of CNS**; *Liver*:**Changes in liver weight**; *Blood*:**Changes in serum composition (e.g., TP, bilirubin cholesterol)**; Inhalation-Rat TCLo • 50 mg/m³ 4 Day(s)-Intermittent; *Peripheral Nerve and Sensation*:**Recording from peripheral motor nerve**; *Kidney, Ureter, and Bladder*:**Changes in kidney weight**; **Mutagen:** Other mutation test systems • Ingestion/Oral-Mouse • 200 mg/kg; **Tumorigen / Carcinogen:** Ingestion/Oral-Rat TDLo • 42 g/kg 78 Week(s)-Intermittent; *Tumorigenic*:**Equivocal tumorigenic agent by RTECS criteria**; *Liver*:**Tumors**
Butene, trichloro- (3% TO 13%)	51023-22-4	**Acute Toxicity:** Inhalation-Rat LC50 • 430 mg/m³ 4 Hour(s); *Sense Organs and Special Senses:Olfaction*:**Ulcerated nasal septum**; *Lungs, Thorax, or Respiration*:**Dyspnea**; *Nutritional and Gross Metabolic:Gross Metabolite Changes*:**Weight loss or decreased weight gain**
Benzene, chloro- (0.4% TO 3%)	108-90-7	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 500 mg/kg; *Behavioral*:**Ataxia**; *Lungs, Thorax, or Respiration*:**Respiratory depression**; Inhalation-Rat LC50 • 2965 ppm 6 Hour(s); Inhalation-Mouse TCLo • 700 ppm 6 Minute(s); *Lungs, Thorax, or Respiration*:**Respiratory depression**; Skin-Rabbit LD50 • >7940 mg/kg; **Multi-dose Toxicity:** Inhalation-Rabbit TCLo • 2.5 mg/m³ 3 Week(s)-Intermittent; *Liver*:**Fatty liver degeneration**; *Blood*:**Changes in cell count (unspecified)**; *Nutritional and Gross Metabolic:Gross Metabolite*

		Changes:**Weight loss or decreased weight gain**; **Mutagen:** Cytogenetic analysis • Inhalation-Rat • 500 µg/L 275 Day(s)-Intermittent; **Reproductive:** Inhalation-Rabbit TCLo • 10 ppm 6 Hour(s)(6-18D preg); *Reproductive Effects:Specific Developmental Abnormalities*:**Musculoskeletal system**; **Tumorigen / Carcinogen:** Ingestion/Oral-Rat TDLo • 61800 mg/kg 103 Week(s)-Intermittent; *Tumorigenic*:**Neoplastic by RTECS criteria**; *Liver*:**Tumors**
Benzene, 1,2,4-trichloro- (0.1% TO 2%)	120-82-1	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 756 mg/kg; Skin-Rat LD50 • 6139 mg/kg; *Behavioral*:**Somnolence (general depressed activity)**; *Behavioral*:**Convulsions or effect on seizure threshold**; **Irritation:** Skin-Rabbit • 1950 mg 13 Week(s)-Intermittent • Moderate irritation; **Multi-dose Toxicity:** Inhalation-Mouse TCLo • 500 mg/m³ 7 Hour(s) 3 Week(s)-Intermittent; *Liver*:**Fatty liver degeneration**; *Blood*:**Changes in cell count (unspecified)**; *Nutritional and Gross Metabolic:Gross Metabolite Changes*:**Weight loss or decreased weight gain**; **Reproductive:** Ingestion/Oral-Rat TDLo • 1800 mg/kg (9-13D preg); *Reproductive Effects:Effects on Embryo or Fetus*:**Cytological changes**; *Reproductive Effects:Effects on Embryo or Fetus*:**Fetotoxicity (except death, e.g., stunted fetus)**; *Reproductive Effects:Effects on Embryo or Fetus*:**Fetal death**; **Tumorigen / Carcinogen:** Ingestion/Oral-Mouse TDLo • 2336 g/kg 2 Year(s)-Continuous; *Tumorigenic*:**Carcinogenic by RTECS criteria**; *Liver*:**Tumors**
Benzene, 1,2,4,5-tetrachloro- (0% TO 6%)	95-94-3	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 1500 mg/kg; *Behavioral*:**General anesthetic**; *Behavioral*:**Somnolence (general depressed activity)**; *Behavioral*:**Convulsions or effect on seizure threshold**; **Multi-dose Toxicity:** Ingestion/Oral-Rat TDLo • 5600 mg/kg 28 Day(s)-Intermittent; *Behavioral*:**Muscle weakness**; *Behavioral*:**Coma**; *Related to Chronic Data*:**Death in the Other Multiple Dose data type field**
1,3-Butadiene, 2-chloro- (0% TO 3%)	126-99-8	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 450 mg/kg; Inhalation-Rat LC50 • 11800 mg/m³ 4 Hour(s); **Irritation:** Skin-Rabbit • 500 µL 24 Hour(s) • Severe irritation; **Multi-dose Toxicity:** Ingestion/Oral-Rat TDLo • 1680 mg/kg 3 Week(s)-Intermittent; *Liver*:**Hepatitis (hepatocellular necrosis), diffuse**; *Liver*:**Other changes**; *Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels*:**Hepatic microsomal mixed oxidase (dealkylation, hydroxylation, etc.)**; Inhalation-Hamster TCLo • 162 ppm 6 Hour(s) 4 Week(s)-Intermittent; *Liver*:**Hepatitis (hepatocellular necrosis), zonal**; *Nutritional and Gross Metabolic:Gross Metabolite Changes*:**Weight loss or decreased weight gain**; *Related to Chronic Data*:**Death in the Other Multiple Dose data type field**; **Mutagen:** Micronucleus test • Inhalation-Mouse • 1480 µg/m³ 2 Hour(s) 2 Day(s)-Continuous; DNA damage • Inhalation-Mouse • 32 ppm 104 Week(s)-Intermittent; Cytogenetic analysis • Inhalation-Rat • 1960 µg/m³ 16 Week(s); Dominant lethal test • Inhalation-Rat • 4 µg/L 48 Day(s)-Intermittent; **Reproductive:** Ingestion/Oral-Rat TDLo • 1 mg/kg (11-12D preg); *Reproductive Effects:Effects on Embryo or Fetus*:**Fetotoxicity (except death, e.g., stunted fetus)**; Ingestion/Oral-Rat TDLo • 1 mg/kg (9-10D preg); *Reproductive Effects:Specific Developmental Abnormalities*:**Other developmental abnormalities**; Inhalation-Rat TCLo • 500 mg/m³ 5 Hour(s)(30W pre); *Reproductive Effects:Maternal Effects*:**Ovaries, fallopian tubes**; **Tumorigen / Carcinogen:** Inhalation-Rat TCLo • 80 ppm 6 Hour(s) 2 Year(s)-Intermittent; *Tumorigenic*:**Carcinogenic by RTECS criteria**; *Sense Organs and Special Senses:Olfaction*:**Tumors**

GHS Properties	Classification
Respiratory sensitization	**OSHA HCS 2012•**No data available
Serious eye damage/Irritation	**OSHA HCS 2012•**Eye Irritation 2
Acute toxicity	**OSHA HCS 2012•**Acute Toxicity - Inhalation 2 - ATEmix (inhl) = 393 ppmV; Acute Toxicity - Oral 4 - ATEmix (oral) = 458 mg/kg
Aspiration Hazard	**OSHA HCS 2012•**No data available
Carcinogenicity	**OSHA HCS 2012•**Carcinogenicity 1A
Skin corrosion/Irritation	**OSHA HCS 2012•**Skin Irritation 2
Skin sensitization	**OSHA HCS 2012•**No data available
STOT-RE	**OSHA HCS 2012•**Specific Target Organ Toxicity Repeated Exposure 1; Specific Target Organ Toxicity Repeated Exposure 2
STOT-SE	**OSHA HCS 2012•**Specific Target Organ Toxicity Single Exposure 1; Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects; Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation
Toxicity for Reproduction	**OSHA HCS 2012•**Toxic to Reproduction 1B
Germ Cell Mutagenicity	**OSHA HCS 2012•**No data available

Potential Health Effects

Inhalation

Acute (Immediate) • Fatal if inhaled. May cause respiratory irritation. May affect the central nervous system. Symptoms may include dizziness, drowsiness, lethargy, coma and death.

Chronic (Delayed) • Local pulmonary irritation of the lungs & dyspnea were noted in animals that later died after inhaling Benzene, 1,2,4-trichloro- (120-82-1).

Skin

Acute (Immediate) • Causes skin irritation.

Chronic (Delayed) • No data available.

Eye

Acute (Immediate) • Causes serious eye irritation.

Chronic (Delayed) • No data available.

Ingestion

Acute (Immediate) • Harmful if swallowed.

Chronic (Delayed) • No data available

Other

Acute (Immediate) • Exposure to chloroform may damage the liver.

Chronic (Delayed) • Kidney and liver damage can occur from severe, acute or chronic exposure.

Carcinogenic Effects • Repeated and prolonged exposure may cause cancer.

Carcinogenic Effects

	CAS	OSHA	IARC	NTP
1,3-Butadiene, 2-chloro-	126-99-8	Not Listed	Group 2B-Possible Carcinogen	Reasonably Anticipated to be Human Carcinogen
Vinyl Chloride	75-01-4	Specifically Regulated Carcinogen	Group 1-Carcinogenic	Known Human Carcinogen
Ethane, 1,1,2,2-tetrachloro-	79-34-5	Not Listed	Group 2B-Possible Carcinogen	Not Listed
Ethylene, tetrachloro-	127-18-4	Not Listed	Group 2A-Probable Carcinogen	Reasonably Anticipated to be Human Carcinogen
Chloroform	67-66-3	Not Listed	Group 2B-Possible Carcinogen	Reasonably Anticipated to be Human Carcinogen
Carbon tetrachloride	56-23-5	Not Listed	Group 2B-Possible Carcinogen	Reasonably Anticipated to be Human Carcinogen
Ethane, 1,2-dichloro-	107-06-2	Not Listed	Group 2B-Possible Carcinogen	Reasonably Anticipated to be Human Carcinogen

Reproductive Effects • Repeated and prolonged exposure may cause reproductive effects.

Key to abbreviations

LC = Lethal Concentration
LD = Lethal Dose
TC = Toxic Concentration
TD = Toxic Dose

Section 12 - Ecological Information

Toxicity

- Material data lacking.

Persistence and degradability

- Material data lacking.

Bioaccumulative potential

- Material data lacking.

Mobility in Soil

- Material data lacking.

Other adverse effects

- No studies have been found.

Section 13 - Disposal Considerations

Waste treatment methods

Product waste • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging waste • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	UN number	UN proper shipping name	Transport hazard class(es)	Packing group	Environmental hazards
DOT	UN1992	Flammable liquids, toxic, n.o.s. (CARBON TETRACHLORIDE, ETHYLENE DICHLORIDE)	3,6.1	II	NDA

Special precautions for user • None specified.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code • No data available

Section 15 - Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA Hazard Classifications • Acute, Chronic, Fire

Inventory		
Component	**CAS**	**TSCA**
1,3-Butadiene, 2-chloro-	126-99-8	Yes
Benzene, 1,2,4,5-tetrachloro-	95-94-3	Yes
Benzene, 1,2,4-trichloro-	120-82-1	Yes
Benzene, chloro-	108-90-7	Yes
Butene, trichloro-	51023-22-4	No
Carbon tetrachloride	56-23-5	Yes
Chloroform	67-66-3	Yes

Dichlorobutene	31423-92-4	Yes
Ethane, 1,1,2,2-tetrachloro-	79-34-5	Yes
Ethane, 1,1,2-trichloro-	79-00-5	Yes
Ethane, 1,1-dichloro-	75-34-3	Yes
Ethane, 1,2-dichloro-	107-06-2	Yes
Ethane, chloro-	75-00-3	Yes
Ethylene, 1,2-dichloro-	540-59-0	Yes
Ethylene, tetrachloro-	127-18-4	Yes
Vinyl Chloride	75-01-4	Yes

United States

Labor

U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

•Benzene, chloro-	108-90-7	Not Listed
•1,3-Butadiene, 2-chloro-	126-99-8	Not Listed
•Ethane, 1,1,2-trichloro-	79-00-5	Not Listed
•Ethane, 1,2-dichloro-	107-06-2	Not Listed
•Vinyl Chloride	75-01-4	Not Listed
•Ethane, chloro-	75-00-3	Not Listed
•Ethane, 1,1,2,2-tetrachloro-	79-34-5	Not Listed
•Benzene, 1,2,4-trichloro-	120-82-1	Not Listed
•Chloroform	67-66-3	Not Listed
•Carbon tetrachloride	56-23-5	Not Listed
•Ethylene, tetrachloro-	127-18-4	Not Listed
•Benzene, 1,2,4,5-tetrachloro-	95-94-3	Not Listed
•Ethane, 1,1-dichloro-	75-34-3	Not Listed
•Butene, trichloro-	51023-22-4	Not Listed
•Ethylene, 1,2-dichloro-	540-59-0	Not Listed
•Dichlorobutene	31423-92-4	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

•Benzene, chloro-	108-90-7	Not Listed
•1,3-Butadiene, 2-chloro-	126-99-8	Not Listed
•Ethane, 1,1,2-trichloro-	79-00-5	Not Listed
•Ethane, 1,2-dichloro-	107-06-2	Not Listed
•Vinyl Chloride	75-01-4	0.5 ppm Action Level (See 29 CFR 1910.1017); 1 ppm TWA (See 29 CFR 1910.1017); 5 ppm STEL (See 29 CFR 1910.1017, 15 min)
•Ethane, chloro-	75-00-3	Not Listed
•Ethane, 1,1,2,2-tetrachloro-	79-34-5	Not Listed
•Benzene, 1,2,4-trichloro-	120-82-1	Not Listed
•Chloroform	67-66-3	Not Listed
•Carbon tetrachloride	56-23-5	Not Listed
•Ethylene, tetrachloro-	127-18-4	Not Listed
•Benzene, 1,2,4,5-tetrachloro-	95-94-3	Not Listed
•Ethane, 1,1-dichloro-	75-34-3	Not Listed
•Butene, trichloro-	51023-22-4	Not Listed
•Ethylene, 1,2-dichloro-	540-59-0	Not Listed
•Dichlorobutene	31423-92-4	Not Listed

Environment

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants		
•Benzene, chloro-	108-90-7	
•1,3-Butadiene, 2-chloro-	126-99-8	
•Ethane, 1,1,2-trichloro-	79-00-5	
•Ethane, 1,2-dichloro-	107-06-2	
•Vinyl Chloride	75-01-4	
•Ethane, chloro-	75-00-3	
•Ethane, 1,1,2,2-tetrachloro-	79-34-5	
•Benzene, 1,2,4-trichloro-	120-82-1	
•Chloroform	67-66-3	
•Carbon tetrachloride	56-23-5	
•Ethylene, tetrachloro-	127-18-4	
•Benzene, 1,2,4,5-tetrachloro-	95-94-3	Not Listed
•Ethane, 1,1-dichloro-	75-34-3	
•Butene, trichloro-	51023-22-4	Not Listed
•Ethylene, 1,2-dichloro-	540-59-0	Not Listed
•Dichlorobutene	31423-92-4	Not Listed
U.S. - CAA (Clean Air Act) - Class I Ozone Depletors		
•Benzene, chloro-	108-90-7	Not Listed
•1,3-Butadiene, 2-chloro-	126-99-8	Not Listed
•Ethane, 1,1,2-trichloro-	79-00-5	Not Listed
•Ethane, 1,2-dichloro-	107-06-2	Not Listed
•Vinyl Chloride	75-01-4	Not Listed
•Ethane, chloro-	75-00-3	Not Listed
•Ethane, 1,1,2,2-tetrachloro-	79-34-5	Not Listed
•Benzene, 1,2,4-trichloro-	120-82-1	Not Listed
•Chloroform	67-66-3	Not Listed
•Carbon tetrachloride	56-23-5	1.1 ODP
•Ethylene, tetrachloro-	127-18-4	Not Listed
•Benzene, 1,2,4,5-tetrachloro-	95-94-3	Not Listed
•Ethane, 1,1-dichloro-	75-34-3	Not Listed
•Butene, trichloro-	51023-22-4	Not Listed
•Ethylene, 1,2-dichloro-	540-59-0	Not Listed
•Dichlorobutene	31423-92-4	Not Listed
U.S. - CAA (Clean Air Act) - Class II Ozone Depletors		
•Benzene, chloro-	108-90-7	Not Listed
•1,3-Butadiene, 2-chloro-	126-99-8	Not Listed
•Ethane, 1,1,2-trichloro-	79-00-5	Not Listed
•Ethane, 1,2-dichloro-	107-06-2	Not Listed
•Vinyl Chloride	75-01-4	Not Listed
•Ethane, chloro-	75-00-3	Not Listed
•Ethane, 1,1,2,2-tetrachloro-	79-34-5	Not Listed
•Benzene, 1,2,4-trichloro-	120-82-1	Not Listed
•Chloroform	67-66-3	Not Listed
•Carbon tetrachloride	56-23-5	Not Listed
•Ethylene, tetrachloro-	127-18-4	Not Listed
•Benzene, 1,2,4,5-tetrachloro-	95-94-3	Not Listed
•Ethane, 1,1-dichloro-	75-34-3	Not Listed
•Butene, trichloro-	51023-22-4	Not Listed
•Ethylene, 1,2-dichloro-	540-59-0	Not Listed
•Dichlorobutene	31423-92-4	Not Listed
U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities		
•Benzene, chloro-	108-90-7	100 lb final RQ; 45.4 kg final RQ
•1,3-Butadiene, 2-chloro-	126-99-8	100 lb final RQ; 45.4 kg final RQ
•Ethane, 1,1,2-trichloro-	79-00-5	100 lb final RQ; 45.4 kg final RQ
•Ethane, 1,2-dichloro-	107-06-2	100 lb final RQ; 45.4 kg final RQ
•Vinyl Chloride	75-01-4	1 lb final RQ; 0.454 kg final

		RQ
•Ethane, chloro-	75-00-3	100 lb final RQ; 45.4 kg final RQ
•Ethane, 1,1,2,2-tetrachloro-	79-34-5	100 lb final RQ; 45.4 kg final RQ
•Benzene, 1,2,4-trichloro-	120-82-1	100 lb final RQ; 45.4 kg final RQ
•Chloroform	67-66-3	10 lb final RQ; 4.54 kg final RQ
•Carbon tetrachloride	56-23-5	10 lb final RQ; 4.54 kg final RQ
•Ethylene, tetrachloro-	127-18-4	100 lb final RQ; 45.4 kg final RQ
•Benzene, 1,2,4,5-tetrachloro-	95-94-3	5000 lb final RQ; 2270 kg final RQ
•Ethane, 1,1-dichloro-	75-34-3	1000 lb final RQ; 454 kg final RQ
•Butene, trichloro-	51023-22-4	Not Listed
•Ethylene, 1,2-dichloro-	540-59-0	1000 lb final RQ; 454 kg final RQ
•Dichlorobutene	31423-92-4	Not Listed
U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs		
•Benzene, chloro-	108-90-7	Not Listed
•1,3-Butadiene, 2-chloro-	126-99-8	Not Listed
•Ethane, 1,1,2-trichloro-	79-00-5	Not Listed
•Ethane, 1,2-dichloro-	107-06-2	Not Listed
•Vinyl Chloride	75-01-4	Not Listed
•Ethane, chloro-	75-00-3	Not Listed
•Ethane, 1,1,2,2-tetrachloro-	79-34-5	Not Listed
•Benzene, 1,2,4-trichloro-	120-82-1	Not Listed
•Chloroform	67-66-3	10 lb EPCRA RQ
•Carbon tetrachloride	56-23-5	Not Listed
•Ethylene, tetrachloro-	127-18-4	Not Listed
•Benzene, 1,2,4,5-tetrachloro-	95-94-3	Not Listed
•Ethane, 1,1-dichloro-	75-34-3	Not Listed
•Butene, trichloro-	51023-22-4	Not Listed
•Ethylene, 1,2-dichloro-	540-59-0	Not Listed
•Dichlorobutene	31423-92-4	Not Listed
U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs		
•Benzene, chloro-	108-90-7	Not Listed
•1,3-Butadiene, 2-chloro-	126-99-8	Not Listed
•Ethane, 1,1,2-trichloro-	79-00-5	Not Listed
•Ethane, 1,2-dichloro-	107-06-2	Not Listed
•Vinyl Chloride	75-01-4	Not Listed
•Ethane, chloro-	75-00-3	Not Listed
•Ethane, 1,1,2,2-tetrachloro-	79-34-5	Not Listed
•Benzene, 1,2,4-trichloro-	120-82-1	Not Listed
•Chloroform	67-66-3	10000 lb TPQ
•Carbon tetrachloride	56-23-5	Not Listed
•Ethylene, tetrachloro-	127-18-4	Not Listed
•Benzene, 1,2,4,5-tetrachloro-	95-94-3	Not Listed
•Ethane, 1,1-dichloro-	75-34-3	Not Listed
•Butene, trichloro-	51023-22-4	Not Listed
•Ethylene, 1,2-dichloro-	540-59-0	Not Listed
•Dichlorobutene	31423-92-4	Not Listed
U.S. - CERCLA/SARA - Section 313 - Emission Reporting		
•Benzene, chloro-	108-90-7	1.0 % de minimis concentration
•1,3-Butadiene, 2-chloro-	126-99-8	0.1 % de minimis concentration
•Ethane, 1,1,2-trichloro-	79-00-5	1.0 % de minimis concentration

•Ethane, 1,2-dichloro-	107-06-2	0.1 % de minimis concentration
•Vinyl Chloride	75-01-4	0.1 % de minimis concentration
•Ethane, chloro-	75-00-3	1.0 % de minimis concentration
•Ethane, 1,1,2,2-tetrachloro-	79-34-5	1.0 % de minimis concentration
•Benzene, 1,2,4-trichloro-	120-82-1	1.0 % de minimis concentration
•Chloroform	67-66-3	0.1 % de minimis concentration
•Carbon tetrachloride	56-23-5	0.1 % de minimis concentration
•Ethylene, tetrachloro-	127-18-4	0.1 % de minimis concentration
•Benzene, 1,2,4,5-tetrachloro-	95-94-3	Not Listed
•Ethane, 1,1-dichloro-	75-34-3	1.0 % de minimis concentration
•Butene, trichloro-	51023-22-4	Not Listed
•Ethylene, 1,2-dichloro-	540-59-0	1.0 % de minimis concentration
•Dichlorobutene	31423-92-4	Not Listed
U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing		
•Benzene, chloro-	108-90-7	Not Listed
•1,3-Butadiene, 2-chloro-	126-99-8	Not Listed
•Ethane, 1,1,2-trichloro-	79-00-5	Not Listed
•Ethane, 1,2-dichloro-	107-06-2	Not Listed
•Vinyl Chloride	75-01-4	Not Listed
•Ethane, chloro-	75-00-3	Not Listed
•Ethane, 1,1,2,2-tetrachloro-	79-34-5	Not Listed
•Benzene, 1,2,4-trichloro-	120-82-1	Not Listed
•Chloroform	67-66-3	Not Listed
•Carbon tetrachloride	56-23-5	Not Listed
•Ethylene, tetrachloro-	127-18-4	Not Listed
•Benzene, 1,2,4,5-tetrachloro-	95-94-3	Not Listed
•Ethane, 1,1-dichloro-	75-34-3	Not Listed
•Butene, trichloro-	51023-22-4	Not Listed
•Ethylene, 1,2-dichloro-	540-59-0	Not Listed
•Dichlorobutene	31423-92-4	Not Listed
U.S. - RCRA (Resource Conservation & Recovery Act) - Basis for Listing - Appendix VII		
•Benzene, chloro-	108-90-7	Included in waste streams: F002, F024, F025, F039, K015, K105, K149
•1,3-Butadiene, 2-chloro-	126-99-8	Included in waste streams: F024, F025, F039
•Ethane, 1,1,2-trichloro-	79-00-5	Included in waste streams: F002, F024, F025, F039, K019, K020, K095, K096
•Ethane, 1,2-dichloro-	107-06-2	Included in waste streams: F024, F025, F039, K018, K019, K020, K029, K030, K096
•Vinyl Chloride	75-01-4	Included in waste streams: F024, F025, F039, K019, K020, K028, K029
•Ethane, chloro-	75-00-3	Included in waste stream: F039
•Ethane, 1,1,2,2-tetrachloro-	79-34-5	Included in waste streams: F024, F025, F039, K019, K020, K030, K073, K095, K150
•Benzene, 1,2,4-trichloro-	120-82-1	Included in waste streams: F024, F025, F039, K150

•Chloroform	67-66-3	Included in waste streams: F024, F025, F039, K009, K010, K019, K020, K021, K029, K073, K116, K149, K150, K151, K158
•Carbon tetrachloride	56-23-5	Included in waste streams: F001, F024, F025, F039, K016, K019, K020, K021, K073, K116, K150, K151, K157
•Ethylene, tetrachloro-	127-18-4	Included in waste streams: F001, F002, F024, F025, F039, K016, K019, K020, K073, K116, K150, K151
•Benzene, 1,2,4,5-tetrachloro-	95-94-3	Not Listed
•Ethane, 1,1-dichloro-	75-34-3	Included in waste streams: F024, F025, F039
•Butene, trichloro-	51023-22-4	Not Listed
•Ethylene, 1,2-dichloro-	540-59-0	Not Listed
•Dichlorobutene	31423-92-4	Not Listed
U.S. - RCRA (Resource Conservation & Recovery Act) - Hazardous Constituents - Appendix VIII to 40 CFR 261		
•Benzene, chloro-	108-90-7	waste number U037
•1,3-Butadiene, 2-chloro-	126-99-8	hazardous constituent - no waste number
•Ethane, 1,1,2-trichloro-	79-00-5	waste number U227
•Ethane, 1,2-dichloro-	107-06-2	waste number U077
•Vinyl Chloride	75-01-4	waste number U043
•Ethane, chloro-	75-00-3	Not Listed
•Ethane, 1,1,2,2-tetrachloro-	79-34-5	waste number U209
•Benzene, 1,2,4-trichloro-	120-82-1	hazardous constituent - no waste number
•Chloroform	67-66-3	waste number U044
•Carbon tetrachloride	56-23-5	waste number U211
•Ethylene, tetrachloro-	127-18-4	waste number U210
•Benzene, 1,2,4,5-tetrachloro-	95-94-3	waste number U207
•Ethane, 1,1-dichloro-	75-34-3	waste number U076
•Butene, trichloro-	51023-22-4	Not Listed
•Ethylene, 1,2-dichloro-	540-59-0	Not Listed
•Dichlorobutene	31423-92-4	Not Listed
U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification		
•Benzene, chloro-	108-90-7	Not Listed
•1,3-Butadiene, 2-chloro-	126-99-8	Not Listed
•Ethane, 1,1,2-trichloro-	79-00-5	Not Listed
•Ethane, 1,2-dichloro-	107-06-2	Section 4, 0.1 % de minimus concentration
•Vinyl Chloride	75-01-4	Not Listed
•Ethane, chloro-	75-00-3	Not Listed
•Ethane, 1,1,2,2-tetrachloro-	79-34-5	Not Listed
•Benzene, 1,2,4-trichloro-	120-82-1	Not Listed
•Chloroform	67-66-3	Not Listed
•Carbon tetrachloride	56-23-5	Not Listed
•Ethylene, tetrachloro-	127-18-4	Not Listed
•Benzene, 1,2,4,5-tetrachloro-	95-94-3	Section 5, 1 % de minimus concentration
•Ethane, 1,1-dichloro-	75-34-3	Not Listed
•Butene, trichloro-	51023-22-4	Not Listed
•Ethylene, 1,2-dichloro-	540-59-0	Not Listed
•Dichlorobutene	31423-92-4	Not Listed

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

•Benzene, chloro-	108-90-7	Not Listed

•1,3-Butadiene, 2-chloro-	126-99-8	carcinogen, initial date 6/2/00
•Ethane, 1,1,2-trichloro-	79-00-5	carcinogen, initial date 10/1/90
•Ethane, 1,2-dichloro-	107-06-2	carcinogen, initial date 10/1/87
•Vinyl Chloride	75-01-4	carcinogen, initial date 2/27/87
•Ethane, chloro-	75-00-3	carcinogen, initial date 7/1/90
•Ethane, 1,1,2,2-tetrachloro-	79-34-5	carcinogen, initial date 7/1/90
•Benzene, 1,2,4-trichloro-	120-82-1	Not Listed
•Chloroform	67-66-3	carcinogen, initial date 10/1/87
•Carbon tetrachloride	56-23-5	carcinogen, initial date 10/1/87
•Ethylene, tetrachloro-	127-18-4	carcinogen, initial date 4/1/88
•Benzene, 1,2,4,5-tetrachloro-	95-94-3	Not Listed
•Ethane, 1,1-dichloro-	75-34-3	carcinogen, initial date 1/1/90
•Butene, trichloro-	51023-22-4	Not Listed
•Ethylene, 1,2-dichloro-	540-59-0	Not Listed
•Dichlorobutene	31423-92-4	Not Listed
U.S. - California - Proposition 65 - Developmental Toxicity		
•Benzene, chloro-	108-90-7	Not Listed
•1,3-Butadiene, 2-chloro-	126-99-8	Not Listed
•Ethane, 1,1,2-trichloro-	79-00-5	Not Listed
•Ethane, 1,2-dichloro-	107-06-2	Not Listed
•Vinyl Chloride	75-01-4	Not Listed
•Ethane, chloro-	75-00-3	Not Listed
•Ethane, 1,1,2,2-tetrachloro-	79-34-5	Not Listed
•Benzene, 1,2,4-trichloro-	120-82-1	Not Listed
•Chloroform	67-66-3	developmental toxicity, initial date 8/7/09
•Carbon tetrachloride	56-23-5	Not Listed
•Ethylene, tetrachloro-	127-18-4	Not Listed
•Benzene, 1,2,4,5-tetrachloro-	95-94-3	Not Listed
•Ethane, 1,1-dichloro-	75-34-3	Not Listed
•Butene, trichloro-	51023-22-4	Not Listed
•Ethylene, 1,2-dichloro-	540-59-0	Not Listed
•Dichlorobutene	31423-92-4	Not Listed
U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)		
•Benzene, chloro-	108-90-7	Not Listed
•1,3-Butadiene, 2-chloro-	126-99-8	Not Listed
•Ethane, 1,1,2-trichloro-	79-00-5	Not Listed
•Ethane, 1,2-dichloro-	107-06-2	Not Listed
•Vinyl Chloride	75-01-4	Not Listed
•Ethane, chloro-	75-00-3	Not Listed
•Ethane, 1,1,2,2-tetrachloro-	79-34-5	Not Listed
•Benzene, 1,2,4-trichloro-	120-82-1	Not Listed
•Chloroform	67-66-3	Not Listed
•Carbon tetrachloride	56-23-5	Not Listed
•Ethylene, tetrachloro-	127-18-4	Not Listed
•Benzene, 1,2,4,5-tetrachloro-	95-94-3	Not Listed
•Ethane, 1,1-dichloro-	75-34-3	Not Listed
•Butene, trichloro-	51023-22-4	Not Listed
•Ethylene, 1,2-dichloro-	540-59-0	Not Listed
•Dichlorobutene	31423-92-4	Not Listed
U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)		
•Benzene, chloro-	108-90-7	Not Listed

•1,3-Butadiene, 2-chloro-	126-99-8	Not Listed
•Ethane, 1,1,2-trichloro-	79-00-5	10 µg/day NSRL
•Ethane, 1,2-dichloro-	107-06-2	10 µg/day NSRL
•Vinyl Chloride	75-01-4	3 µg/day NSRL
•Ethane, chloro-	75-00-3	150 µg/day NSRL
•Ethane, 1,1,2,2-tetrachloro-	79-34-5	3 µg/day NSRL
•Benzene, 1,2,4-trichloro-	120-82-1	Not Listed
•Chloroform	67-66-3	20 µg/day NSRL (oral); 40 µg/day NSRL (inhalation)
•Carbon tetrachloride	56-23-5	5 µg/day NSRL
•Ethylene, tetrachloro-	127-18-4	14 µg/day NSRL
•Benzene, 1,2,4,5-tetrachloro-	95-94-3	Not Listed
•Ethane, 1,1-dichloro-	75-34-3	100 µg/day NSRL
•Butene, trichloro-	51023-22-4	Not Listed
•Ethylene, 1,2-dichloro-	540-59-0	Not Listed
•Dichlorobutene	31423-92-4	Not Listed
U.S. - California - Proposition 65 - Reproductive Toxicity - Female		
•Benzene, chloro-	108-90-7	Not Listed
•1,3-Butadiene, 2-chloro-	126-99-8	Not Listed
•Ethane, 1,1,2-trichloro-	79-00-5	Not Listed
•Ethane, 1,2-dichloro-	107-06-2	Not Listed
•Vinyl Chloride	75-01-4	Not Listed
•Ethane, chloro-	75-00-3	Not Listed
•Ethane, 1,1,2,2-tetrachloro-	79-34-5	Not Listed
•Benzene, 1,2,4-trichloro-	120-82-1	Not Listed
•Chloroform	67-66-3	Not Listed
•Carbon tetrachloride	56-23-5	Not Listed
•Ethylene, tetrachloro-	127-18-4	Not Listed
•Benzene, 1,2,4,5-tetrachloro-	95-94-3	Not Listed
•Ethane, 1,1-dichloro-	75-34-3	Not Listed
•Butene, trichloro-	51023-22-4	Not Listed
•Ethylene, 1,2-dichloro-	540-59-0	Not Listed
•Dichlorobutene	31423-92-4	Not Listed
U.S. - California - Proposition 65 - Reproductive Toxicity - Male		
•Benzene, chloro-	108-90-7	Not Listed
•1,3-Butadiene, 2-chloro-	126-99-8	Not Listed
•Ethane, 1,1,2-trichloro-	79-00-5	Not Listed
•Ethane, 1,2-dichloro-	107-06-2	Not Listed
•Vinyl Chloride	75-01-4	Not Listed
•Ethane, chloro-	75-00-3	Not Listed
•Ethane, 1,1,2,2-tetrachloro-	79-34-5	Not Listed
•Benzene, 1,2,4-trichloro-	120-82-1	Not Listed
•Chloroform	67-66-3	Not Listed
•Carbon tetrachloride	56-23-5	Not Listed
•Ethylene, tetrachloro-	127-18-4	Not Listed
•Benzene, 1,2,4,5-tetrachloro-	95-94-3	Not Listed
•Ethane, 1,1-dichloro-	75-34-3	Not Listed
•Butene, trichloro-	51023-22-4	Not Listed
•Ethylene, 1,2-dichloro-	540-59-0	Not Listed
•Dichlorobutene	31423-92-4	Not Listed

Other Information

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

Section 16 - Other Information

Revision Date • 28/July/2015

Preparation Date • 28/July/2015

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Key to abbreviations
NDA = No Data Available