Distributed by: **Power Kleen LLC**
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Pendleton, IN 46064
765-278-4149

Safety Data Sheet

Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

Product Name • **TRI145A - Trichloroethylene Double Stabilized**

Synonyms • Trichloroethene; Trichlorethylene; Trichlor; C2HCl3 TRIDS

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

Relevant identified use(s) • Solvent. Metal degreaser.

1.3 Details of the supplier of the safety data sheet

Manufacturer • Axiall, LLC

1000 Abernathy Rd. NE, Suite 1200
Atlanta, GA 30328
United States
www.axiall.com
msdsinfo@axiall.com

Telephone (General) • +1 225-685-1240

Responsible Party - EU • Intertek France

12 Rue Alfred Kastler
71530 Fragnes
France

christian.gimenez@intertek.com

Telephone (General) • 33 (0) 385 99 1274

Telephone (General) • 33 385 99 1288

1.4 Emergency telephone number

Manufacturer • +1 304-455-6882

Section 2: Hazards Identification

EU/EEC

According to: Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 2015/830]

2.1 Classification of the substance or mixture

CLP • Aspiration 1 - H304
Skin Irritation 2 - H315
Skin Sensitization 1 - H317
Eye Irritation 2 - H319
Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects - H336
Germ Cell Mutagenicity 2 - H341
Carcinogenicity 1B - H350
Hazardous to the aquatic environment Chronic 3 - H412

2.2 Label Elements

CLP

DANGER

Precautionary statements

Prevention • P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P261 - Avoid breathing mist/vapours/spray.
P264 - Wash thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P273 - Avoid release to the environment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P281 - Use personal protective equipment as required.

Response • P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312 - Call a POISON CENTER or doctor/physician if you feel unwell.
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
P321 - Specific treatment, see supplemental first aid information.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P362 - Take off contaminated clothing and wash before reuse.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P331 - Do NOT induce vomiting.
P308+P313 - IF exposed or concerned: Get medical advice/attention.

Storage/Disposal • P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other Hazards

CLP

• According to Regulation (EC) No. 1272/2008 (CLP) this material is considered hazardous.

UN GHS Revision 3

According to: UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS): Third Revised Edition

2.1 Classification of the substance or mixture

UN GHS

• Acute Toxicity Oral 5
Aspiration 1
Skin Irritation 2
Skin Sensitization 1
Eye Irritation 2
Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects
Germ Cell Mutagenicity 2

Carcinogenicity 1A
Reproductive Toxicity 2
Hazardous to the aquatic environment Acute 3

2.2 Label elements

UN GHS

DANGER

Hazard statements • May be harmful if swallowed
May be fatal if swallowed and enters airways
Causes skin irritation
May cause an allergic skin reaction
Causes serious eye irritation
May cause drowsiness or dizziness
Suspected of causing genetic defects.
May cause cancer.
Suspected of damaging fertility or the unborn child.
Harmful to aquatic life

Precautionary statements

Prevention • Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing mist/vapours/spray.
Wash thoroughly after handling.
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.
Use personal protective equipment as required.

Response • IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell.
IF ON SKIN: Wash with plenty of soap and water.
Specific treatment, see supplemental first aid information.
If skin irritation or rash occurs: Get medical advice/attention.
Take off contaminated clothing and wash before reuse.
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.
Do NOT induce vomiting.
IF exposed or concerned: Get medical advice/attention.

Storage/Disposal • Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other hazards

UN GHS

• According to the Globally Harmonized System for Classification and Labeling (GHS) this product is considered hazardous

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

OSHA HCS 2012

• Aspiration 1
Skin Irritation 2

Skin Sensitization 1
Eye Irritation 2
Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects
Germ Cell Mutagenicity 2
Carcinogenicity 1A
Reproductive Toxicity 2

2.2 Label elements

OSHA HCS 2012

DANGER

Hazard statements
- May be fatal if swallowed and enters airways
Causes skin irritation
May cause an allergic skin reaction
Causes serious eye irritation
May cause drowsiness or dizziness
Suspected of causing genetic defects.
May cause cancer.
Suspected of damaging fertility or the unborn child.

Precautionary statements

Prevention
- Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing mist/vapours/spray.
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.

Response
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell.
IF ON SKIN: Wash with plenty of soap and water.
Specific treatment, see supplemental first aid information.
If skin irritation or rash occurs: Get medical advice/attention.
Take off contaminated clothing and wash before reuse.
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.
Do NOT induce vomiting.
IF exposed or concerned: Get medical advice/attention.

Storage/Disposal
- Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other hazards

OSHA HCS 2012
- Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

Canada

According to: WHMIS 2015

2.1 Classification of the substance or mixture

WHMIS 2015
- Aspiration 1
Skin Irritation 2
Skin Sensitization 1

Eye Irritation 2
Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects
Germ Cell Mutagenicity 2
Carcinogenicity 1A
Reproductive Toxicity 2

2.2 Label elements

WHMIS 2015

DANGER

Hazard statements
- May be fatal if swallowed and enters airways
Causes skin irritation
May cause an allergic skin reaction
Causes serious eye irritation
May cause drowsiness or dizziness
Suspected of causing genetic defects.
May cause cancer.
Suspected of damaging fertility or the unborn child.

Precautionary statements

Prevention
- Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing mist/vapours/spray.
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.

Response
- IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER/doctor if you feel unwell.
IF ON SKIN: Wash with plenty of water and soap.
Specific treatment, see supplemental first aid information.
Take off contaminated clothing and wash it before reuse.
If skin irritation or rash 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/doctor.
Do NOT induce vomiting.
IF exposed or concerned: Get medical advice/attention.

Storage/Disposal
- Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other hazards

WHMIS 2015
- In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

Section 3 - Composition/Information on Ingredients

3.1 Substances

Composition					
Chemical Name	**Identifiers**	**%**	**LD50/LC50**	**Classifications According to Regulation/Directive**	**Comments**

Trichloroethylene	**CAS:**79-01-6 **EC Number:**201-167-4 **EU Index:**602-027-00-9	> 98%	Inhalation-Rat LC50 • 140700 mg/m³ 1 Hour(s) Ingestion/Oral-Rat LD50 • 4920 mg/kg Skin-Rabbit LD50 • 20 mL/kg	**EU CLP:** Annex VI, Table 3.1: Carc. 1B, H350; Muta. 2, H341; Eye Irrit. 2, H319; Skin Irrit. 2, H315; STOT SE 3: Narc.,H336; Aquatic Chronic 3, H412; / Skin Sens. 1, H317 **UN GHS Revision 3:** Carc. 1A; Muta. 2; Eye Irrit. 2; Skin Irrit. 2; STOT SE 3: Narc.; Repr. 2; Aquatic Acute 3; Asp. Tox. 1; Acute tox. 5 (Oral); Skin Sens. 1 **OSHA HCS 2012:** Carc. 1A; Muta. 2; Eye Irrit. 2; Skin Irrit. 2; STOT SE 3: Narc.; Repr. 2; Asp. Tox. 1; Skin Sens. 1 **WHMIS 2015:** Flam. Liq. 4; Carc. 1A; Muta. 2; Eye Irrit. 2; Skin Irrit. 2; STOT SE 3: Narc.; Repr. 2; Asp. Tox. 1; Skin Sens. 1	Subject to TSCA 5 (a), see Section 15 of the SDS for more information.
Stabilizer	*Proprietary*	0.6% TO 0.8%	NDA	**EU CLP:** Annex VI, Table 3.1: Flam. Liq. 2, H225; Carc. 2, H351; Acute Tox. 3, H331; Acute Tox. 4, H312; Acute Tox. 4, H302; Eye Irrit. 2, H319; STOT SE 3: Resp. Irrit., H335; Skin Irrit. 2, H315; Aquatic Chronic 3, H412 **UN GHS Revision 3:** Flam. Liq. 2; Carc. 2; Acute Tox. 4 (Orl); Acute Tox. 4 (Skn); Acute Tox. 3 (Inhl); Skin Irrit. 3; Eye Irrit. 2; STOT SE 3: Narc. **OSHA HCS 2012:** Flam. Liq. 2; Carc. 2; Acute Tox. 4 (Orl); Acute Tox. 4 (Dermal); Acute Tox. 3 (Inhl); Eye Irrit. 2; STOT SE 3: Narc. **WHMIS 2015:** Flam. Liq. 2; Carc. 2; Acute Tox. 4 (Orl); Acute Tox. 4 (Skn); Acute Tox. 3 (inhl); Eye Irrit. 2; STOT SE 3: Narc.	NDA
Stabilizer	*Proprietary*	0.26% TO 0.35%	Ingestion/Oral-Rat LD50 • 1870 mg/kg Inhalation-Mouse LC50 • 48 g/m³ Skin-Rabbit LD50 • 5040 mg/kg	**EU CLP:** Annex VI, Table 3.1: Flam. Liq. 2, H225; Eye Dam. 1, H318; STOT SE 3: Narc., H336 **UN GHS Revision 3:** Flam. Liq. 2; Eye Irrit. 2; STOT SE 3: Resp. Irrit. & Narc.; Acute Tox. 4 (Orl); Skin Irrit. 3; **OSHA HCS 2012:** Flam. Liq. 2; Eye irrit. 2; STOT SE 3: Resp. Irrit. & Narc.; Acute Tox. 4 (Orl) **WHMIS 2015:** Flam. Liq. 2; Eye Irrit. 2; STOT SE 3: Narc.; Acute Tox. 4 (Orl)	NDA

3.2 Mixtures

- Material does not meet the criteria of a mixture.

See Section 16 for full text of H-statements.

Section 4 - First Aid Measures

4.1 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. Do not use mouth-to-mouth method if victim inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention immediately.

Skin

- For minor skin contact, avoid spreading material on unaffected skin. In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Remove contaminated clothing and shoes. If irritation develops and persists, get

medical attention.

Eye
- In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation develops and persists, get medical attention.

Ingestion
- If swallowed, rinse mouth with water (only if the person is conscious). Do NOT induce vomiting. Do not use mouth-to-mouth method if victim ingested the substance. Obtain medical attention immediately if ingested.

4.2 Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to Physician
- Only administer adrenaline after careful consideration following overexposure. Increased sensitivity of the heart to adrenaline may be caused by overexposure to this product. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Section 5 - Firefighting Measures

5.1 Extinguishing media

Suitable Extinguishing Media
- Use dry chemical, carbon dioxide, water spray (fog) or foam.

Unsuitable Extinguishing Media
- Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards
- Containers may explode when heated.
Emits toxic fumes under fire conditions.
Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
Vapors may accumulate in confined areas (basement, tanks, hopper/tank cars etc.)
Vapors may travel to source of ignition and flash back.
Vapor concentration in a confined or poorly ventilated area can be ignited upon contact with a high energy spark, flame, or high intensity source of heat. This can occur at concentrations ranging between the upper and lower explosion limits (by volume). In a fire or if heated, a pressure increase will occur and the container may burst.
Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous Combustion Products
- Depending on conditions, decomposition products may include the following materials: carbon oxides, halogenated compounds, carbon halides, hydrogen chloride, and possible traces of phosgene.

5.3 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.
LARGE FIRES: Dike fire control water for later disposal; do not scatter the material.

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal Precautions
- Ventilate enclosed areas. 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. Avoid breathing mist, vapors, spray. Avoid contact with skin, eyes, and 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.

6.2 Environmental precautions

- Avoid release to the environment. Avoid contamination of water supplies. Handling, storage and use procedures must be carefully monitored to avoid spills or leaks. Any spill or leak has the potential to cause underground water contamination which may, if sufficiently severe, render a drinking water source unfit for human consumption. Contamination that does occur cannot be easily corrected.

6.3 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.
A vapor suppressing foam may be used to reduce vapors.
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.
Use clean non-sparking tools to collect absorbed material.
All equipment used when handling the product must be grounded.

6.4 Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

Section 7 - Handling and Storage

7.1 Precautions for safe handling

Handling

- Handle and open container with care. Use only with adequate ventilation. Avoid contact with heat and ignition sources. All equipment used when handling the product must be grounded. Use only non-sparking tools. Take precautionary measures against static charges. Wear appropriate personal protective equipment; avoid direct contact. Avoid breathing mist, vapors and/or spray. Avoid contact with skin, eyes, and clothing. Do not ingest. This material or its vapors when in contact with flames, hot glowing surfaces or electric arcs, depending on conditions, can decompose to form hydrogen chloride gas and possible traces of phosgene. Do not use cutting or welding torches on drums that contained this product unless properly purged and cleaned. Do not ship in containers made of zinc, aluminum, or copper due to product incompatibility. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

7.2 Conditions for safe storage, including any incompatibilities

Storage

- Keep container tightly closed. Keep from direct sunlight. Store in a cool, dry, well-ventilated place. Do not store above the following temperature: 35°C (95°F). Avoid contact with heat and ignition sources and oxidizers. Do not store or stack aluminum in contact with this product to prevent possible solvent decomposition (stacking corrosion). Liquid oxygen or other strong oxidants may form explosive mixtures with this product. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Empty containers retain product residue and can be hazardous. Do not cut, weld, puncture or incinerate container.

7.3 Specific end use(s)

- Refer to Section 1.2 - Relevant identified uses.

Section 8 - Exposure Controls/Personal Protection

8.1 Control parameters

Exposure Limits/Guidelines						
	Result	ACGIH	Canada British Columbia	Canada Ontario	Canada Quebec	NIOSH
Stabilizer (Proprietary)	TWAs	100 ppm TWA	100 ppm TWA	100 ppm TWA	200 ppm TWAEV; 492 mg/m3 TWAEV	200 ppm TWA; 500 mg/m3 TWA
	STELs	Not established	Not established	Not established	250 ppm STEV; 614 mg/m3 STEV	250 ppm STEL; 625 mg/m3 STEL
Trichloroethylene (79-01-6)	STELs	25 ppm STEL	25 ppm STEL	25 ppm STEL	200 ppm STEV; 1070 mg/m3 STEV	Not established
	TWAs	10 ppm TWA	10 ppm TWA	10 ppm TWA	50 ppm TWAEV; 269 mg/m3 TWAEV	Not established

Exposure Limits/Guidelines (Con't.)		
	Result	OSHA
Stabilizer (Proprietary)	TWAs	200 ppm TWA; 500 mg/m3 TWA
Trichloroethylene (79-01-6)	Ceilings	200 ppm Ceiling
	TWAs	100 ppm TWA

8.2 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.

Personal Protective Equipment

Respiratory

- If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Eye/Face

- Wear chemical splash goggles and face shield.

Skin/Body

- Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. HANDS: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Environmental Exposure Controls

- Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow best practice for site management and disposal of waste.

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

STEV = Short Term Exposure Value

TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

TWAEV = Time-Weighted Average Exposure Value

Section 9 - Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Material Description			
Physical Form	Liquid	Appearance/Description	Colorless liquid with an ethereal odor.
Color	Colorless	Odor	Ethereal odor.
Odor Threshold	No data available		
General Properties			
Boiling Point	86 to 90 °C(186.8 to 194 °F)	Melting Point/Freezing Point	-86.4 °C(-123.52 °F)
Decomposition Temperature	No data available	pH	>= 6.7
Specific Gravity/Relative Density	1.46 to 1.47 Water=1	Water Solubility	Slightly Soluble 0.1 to 1 %
Viscosity	0.55 Centipoise (cPs, cP) or mPas @ 25 °C(77 °F)	Explosive Properties	No data available
Oxidizing Properties:	No data available		
Volatility			
Vapor Pressure	57.8 mmHg (torr) @ 20 °C(68 °F)	Vapor Density	4.54 Air=1
Evaporation Rate	0.28 Ether = 1	Volatiles (Wt.)	100 %
Volatiles (Vol.)	100 %		
Flammability			
Flash Point	None (by DOT test method)	UEL	52 %
LEL	7.8 %	Autoignition	420 °C(788 °F)
Flammability (solid, gas)	Not relevant.		
Environmental			
Octanol/Water Partition coefficient	2.42 Kow		

9.2 Other Information

- No additional physical and chemical parameters noted.

Section 10: Stability and Reactivity

10.1 Reactivity

- No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

- Stable under recommended storage and handling conditions.

10.3 Possibility of hazardous reactions

- Under normal conditions of storage and use, hazardous polymerization will not occur.

10.4 Conditions to avoid

- Keep away from ignition sources such as heat/sparks/open flame. - No smoking. When exposed to high temperatures may produce hazardous decomposition products.When this product is involved in fires, it can decompose to hydrogen chloride and possible traces of phosgene.

10.5 Incompatible materials

- Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids. Avoid contamination with caustic soda, caustic potash or oxidizing materials, shock sensitive compounds may be formed.

10.6 Hazardous decomposition products

- Depending on conditions, decomposition products may include the following materials: carbon oxides, halogenated compounds, carbon halides, hydrogen chloride, and

possible traces of phosgene.

Section 11 - Toxicological Information

11.1 Information on toxicological effects

Components		
Trichloroethylene (> 98%)	79-01-6	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 4920 mg/kg; Inhalation-Rat LC50 • 140700 mg/m³ 1 Hour(s); Skin-Rabbit LD50 • 20 mL/kg; **Irritation:** Eye-Rabbit • 20 mg 24 Hour(s) • Moderate irritation; Skin-Rabbit • 2 mg 24 Hour(s) • Severe irritation; **Multi-dose Toxicity:** Ingestion/Oral-Mouse TDLo • 22.4 mg/kg 32 Week(s)-Continuous; *Liver*:**Hepatitis (hepatocellular necrosis), diffuse**; *Skin and Appendages:After systemic exposure*:**Dermatitis, other**; *Immunological Including Allergic*:**Autoimmune**; Inhalation-Mouse TCLo • 500 ppm 4 Week(s)-Intermittent; *Liver*:**Hepatitis (hepatocellular necrosis), zonal**; *Endocrine*:**Other changes**; *Immunological Including Allergic*:**Decrease in humoral immune response**; Inhalation-Rat TCLo • 500 ppm 182 Day(s)-Intermittent; *Kidney, Ureter, and Bladder*:**Interstitial nephritis**; *Kidney, Ureter, and Bladder*:**Renal function tests depressed**; **Mutagen:** Sperm Morphology • Inhalation-Mouse • 100 ppm; Micronucleus test • Inhalation-Rat • 5 ppm 6 Hour(s) -Continuous; **Reproductive:** Ingestion/Oral-Rat TDLo • 1140 mg/kg (14D pre-21D post); *Reproductive Effects:Specific Developmental Abnormalities*:**Central nervous system**; Ingestion/Oral-Rat TDLo • 76 mg/kg (multigenerations); *Reproductive Effects:Specific Developmental Abnormalities*:**Hepatobiliary system**; *Reproductive Effects:Specific Developmental Abnormalities*:**Urogenital system**; *Reproductive Effects:Effects on Newborn*:**Growth statistics (e.g., reduced weight gain)**; Inhalation-Rat TCLo • 100 ppm 4 Hour(s)(8-21D preg); *Reproductive Effects:Specific Developmental Abnormalities*:**Musculoskeletal system**; **Tumorigen / Carcinogen:** Inhalation-Mouse • 150 ppm 7 Hour(s) 2 Year(s)-Intermittent; *Tumorigenic*:**Carcinogenic by RTECS criteria**; *Lungs, Thorax, or Respiration*:**Tumors**; *Skin and Appendages:Other*:**Tumors**
Impurities, Stabilizers, etc...		
Stabilizer (0.6% TO 0.8%)	*Proprietary*	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 500 mg/kg; Inhalation-Rat LC50 • 6300 mg/m³ 4 Hour(s); Skin-Rabbit LD50 • 2100 µL/kg; **Irritation:** Eye-Rabbit • 100 mg 24 Hour(s) • Moderate irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Mild irritation; **Multi-dose Toxicity:** Inhalation-Rat TCLo • 1600 ppm 6 Hour(s) 14 Day(s)-Intermittent; *Related to Chronic Data*:**Death in the Other Multiple Dose data type field**; **Reproductive:** Inhalation-Rabbit TCLo • 1000 ppm 7 Hour(s)(1-24D preg); *Reproductive Effects:Effects on Fertility*:**Post-implantation mortality**; **Tumorigen / Carcinogen:** Inhalation-Rat TCLo • 400 ppm 6 Hour(s) 5 Day(s); *Tumorigenic*:**Carcinogenic by RTECS criteria**; *Sense Organs and Special Senses:Olfaction*:**Tumors**; *Lungs, Thorax, or Respiration*:**Tumors**
Stabilizer (0.26% TO 0.35%)	*Proprietary*	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 1870 mg/kg; Inhalation-Rat LCLo • 9800 mg/m³ 4 Hour(s); *Behavioral*:**General anesthetic**; *Lungs, Thorax, or Respiration*:**Other changes**; Skin-Rabbit LD50 • 5040 mg/kg; **Irritation:** Eye-Rabbit • 20 mg 24 Hour(s) • Moderate irritation; Skin-Rabbit • 500 mg-Open • Mild irritation; **Reproductive:** Inhalation-Rat TCLo • 7000 ppm 7 Hour(s)(6W male); *Reproductive Effects:Effects on Fertility*:**Male fertility index**; **Tumorigen / Carcinogen:** Ingestion/Oral-Rat TDLo • 50 g/kg 81 Week(s)-Intermittent; *Tumorigenic*:**Carcinogenic by RTECS criteria**; *Liver*:**Tumors**; *Blood*:**Leukemia**

GHS Properties	Classification

Acute toxicity	**EU/CLP** • Acute Toxicity - Dermal - Classification criteria not met; Acute Toxicity - Inhalation - Classification criteria not met; Acute Toxicity - Oral - Classification criteria not met **UN GHS 3** • Acute Toxicity - Dermal - Classification criteria not met; Acute Toxicity - Inhalation - Classification criteria not met; Acute Toxicity - Oral 5 **OSHA HCS 2012** • Acute Toxicity - Dermal - Classification criteria not met; Acute Toxicity - Inhalation - Classification criteria not met; Acute Toxicity - Oral - Classification

	criteria not met **WHMIS 2015** • No data available
Skin corrosion/Irritation	**EU/CLP** • Skin Irritation 2 **UN GHS 3** • Skin Irritation 2 **OSHA HCS 2012** • Skin Irritation 2 **WHMIS 2015** • Skin Irritation 2
Serious eye damage/Irritation	**EU/CLP** • Eye Irritation 2 **UN GHS 3** • Eye Irritation 2 **OSHA HCS 2012** • Eye Irritation 2 **WHMIS 2015** • Eye Irritation 2
Skin sensitization	**EU/CLP** • Skin Sensitizer 1 **UN GHS 3** • Skin Sensitizer 1 **OSHA HCS 2012** • Skin Sensitizer 1 **WHMIS 2015** • Skin Sensitizer 1
Respiratory sensitization	**EU/CLP** • No data available **UN GHS 3** • No data available **OSHA HCS 2012** • No data available **WHMIS 2015** • No data available
Aspiration Hazard	**EU/CLP** • Aspiration 1 **UN GHS 3** • Aspiration 1 **OSHA HCS 2012** • Aspiration 1 **WHMIS 2015** • Aspiration 1
Carcinogenicity	**EU/CLP** • Carcinogenicity 1B; May cause cancer **UN GHS 3** • Carcinogenicity 1A **OSHA HCS 2012** • Carcinogenicity 1A **WHMIS 2015** • Carcinogenicity 1A
Germ Cell Mutagenicity	**EU/CLP** • Germ Cell Mutagenicity 2 **UN GHS 3** • Germ Cell Mutagenicity 2 **OSHA HCS 2012** • Germ Cell Mutagenicity 2 **WHMIS 2015** • Germ Cell Mutagenicity 2
Toxicity for Reproduction	**EU/CLP** • Data lacking **UN GHS 3** • Toxic to Reproduction 2 **OSHA HCS 2012** • Toxic to Reproduction 2 **WHMIS 2015** • Toxic to Reproduction 2
STOT-SE	**EU/CLP** • Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects **UN GHS 3** • Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects **OSHA HCS 2012** • Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects **WHMIS 2015** • Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects
STOT-RE	**EU/CLP** • Classification criteria not met **UN GHS 3** • Classification criteria not met **OSHA HCS 2012** • Classification criteria not met **WHMIS 2015** • No data available

Potential Health Effects

Inhalation

Acute (Immediate) • May affect the central nervous system. Symptoms may include dizziness, drowsiness, lethargy, coma and death.

Chronic (Delayed) • No data available

Skin

Acute (Immediate)
- Causes skin irritation. Trichloroethylene was tested for skin sensitization in mice and guinea pig. TCE is considered a skin sensitizer under the conditions of the testing criteria.

Chronic (Delayed)
- Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Eye

Acute (Immediate)
- Causes serious eye irritation.

Chronic (Delayed)
- No data available

Ingestion

Acute (Immediate)
- May be harmful if swallowed. Material may be aspirated into lungs during ingestion and/or subsequent vomiting. Aspiration of this material will cause severe lung injury, chemical pneumonitis, pulmonary edema or death.

Chronic (Delayed)
- No data available

Other

Chronic (Delayed)
- Prolonged exposure may result in liver and kidney damage as well as immunological effects. One immunological effect that has been reported in several studies linked occupational trichloroethylene exposure to a rare but severe immunological skin disorder and accompanying hepatitis (such as Stevens-Johnson syndrome) especially in people of Asian descent. The clinical features associated with these disorders include generalized severe dermatitis and shedding of the skin, fever, abnormal liver function, jaundice, and sometimes death due to liver failure and infection. The science involved in the understanding of this association between exposure to trichloroethylene and these severe immunological skin disorders is ongoing. Loss of auditory function (hearing loss) has also been observed in laboratory animals at high trichloroethylene exposure concentrations (> 2000 ppm). Prudent handling practices should be followed to minimize human exposure.

Mutagenic Effects
- When activated with microsomal enzymes, trichloroethylene has been shown to be weakly positive in certain microbial mutagen test systems.

Carcinogenic Effects
- Chronic exposure to trichloroethylene primarily produced renal toxicity and tumors in rats and liver and lung tumors in mice, with some reports of tumors at other sites. Extensive epidemiologic cohort studies of Trichloroethylene-exposed workers do not indicate significant increases in cancer incidence, but case–control studies suggest that prolonged exposure to high concentrations of Trichloroethylene can increase the incidence of renal cancer.

Carcinogenic Effects

	CAS	IARC	NTP
Trichloroethylene	79-01-6	Group 1-Carcinogenic	Reasonably Anticipated to be Human Carcinogen

Reproductive Effects
- Trichloroethylene has not been shown to produce female reproductive toxicity. Damage to the epididymis and sperm integrity has been observed in male mice exposed to high levels of trichloroethylene (≥ 1000 ppm); however, there is very limited evidence existing for any male reproductive effect in rats or humans.

Key to abbreviations

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

Section 12 - Ecological Information

12.1 Toxicity

	CAS	
		Aquatic Toxicity-Fish: 96 Hour(s) EC50 *Fathead minnow - Pimephales promelas* 21900-28500 µg/L Comments: Trichloroethylene

TRI145A - Trichloroethylene Double Stabilized	NDA	96 Hour(s) LC50 *Sheepshead minnow - Cyprinodon variegatus* 52000-64000 µg/L Comments: Trichloroethylene **Aquatic Toxicity-Crustacea:** 48 Hour(s) LC50 Water Flea *Daphnia magna* 18000-26000 µg/L Comments: Trichloroethylene 48 Hour(s) NOEC Water Flea *Daphnia magna* 2200 µg/L Comments: Trichloroethylene **Aquatic Toxicity-Algae and Other Aquatic Plant(s):** 96 Hour(s) EC50 Algae *Green Algae* 390000 µg/L Comments: Trichloroethylene

- Harmful to aquatic life with long lasting effects.

12.2 Persistence and degradability

- Not expected to be readily biodegradable.

12.3 Bioaccumulative potential

- This product shows a low bioaccumulation potential. The BCF for Trichloroethylene (79-01-6) ranged from 4.3, 17, 39 and up to 302, in carp, bluegill sunfish, rainbow trout, and green algae respectively.

12.4 Mobility in Soil

- No data available

12.5 Results of PBT and vPvB assessment

- No PBT and vPvB assessment has been conducted.

12.6 Other adverse effects

- Water polluting material. May be harmful to the environment if released in large quantities.

Section 13 - Disposal Considerations

13.1 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

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	UN1710	Trichloroethylene	6.1	III	NDA
TDG	UN1710	TRICHLOROETHYLENE	6.1	III	NDA
IMO/IMDG	UN1710	TRICHLOROETHYLENE	6.1	III	NDA
IATA/ICAO	UN1710	Trichloroethylene	6.1	III	NDA

14.6 Special precautions for user
- Do not ship in containers made of zinc, aluminum, or copper due to product incompatibility. Do not ship lightly stabilized grades in aluminum trailers.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
- Data lacking.

Section 15 - Regulatory Information

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

mixture

- CAS 79-01-6. Pursuant to the Toxic Substance Control Act (TSCA), EPA has issued a Significant New Use Rule (SNUR) for trichloroethylene (TCE). See 40 CFR 721.10851. The significant new use is the manufacture or processing for use in a consumer product, with an exception for use of TCE in cleaners and solvent degreasers, film cleaners, hoof polishes, lubricants, mirror edge sealants, and pepper spray.

SARA Hazard Classifications • Acute, Chronic

Inventory						
Component	**CAS**	**Canada DSL**	**Canada NDSL**	**EU EINECS**	**EU ELNICS**	**TSCA**
Stabilizer	*Proprietary*	Yes	No	Yes	No	Yes
Trichloroethylene	79-01-6	Yes	No	Yes	No	Yes
Stabilizer	*Proprietary*	Yes	No	Yes	No	Yes

Canada

Labor

Canada - WHMIS 1988 - Classifications of Substances

• Stabilizer	*Proprietary*	B2, D2B
• Trichloroethylene	79-01-6	D1B, D2A, D2B
• Stabilizer	*Proprietary*	Not Listed

Canada - WHMIS 1988 - Ingredient Disclosure List

• Stabilizer	*Proprietary*	1 %
• Trichloroethylene	79-01-6	1 %
• Stabilizer	*Proprietary*	Not Listed

Environment

Canada - CEPA - Priority Substances List

• Stabilizer	*Proprietary*	Not Listed
• Trichloroethylene	79-01-6	Priority Substance List 1 (substance considered toxic)
• Stabilizer	*Proprietary*	Not Listed

United States

Labor

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

• Stabilizer	*Proprietary*	Not Listed
• Trichloroethylene	79-01-6	Not Listed
• Stabilizer	*Proprietary*	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• Stabilizer	*Proprietary*	Not Listed
• Trichloroethylene	79-01-6	Not Listed
• Stabilizer	*Proprietary*	Not Listed

Environment

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

• Stabilizer	*Proprietary*	Not Listed
• Trichloroethylene	79-01-6	
• Stabilizer	*Proprietary*	

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

• Stabilizer	*Proprietary*	Not Listed

• Trichloroethylene	79-01-6	100 lb final RQ; 45.4 kg final RQ
• Stabilizer	*Proprietary*	100 lb final RQ; 45.4 kg final RQ

U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

• Stabilizer	*Proprietary*	Not Listed
• Trichloroethylene	79-01-6	Not Listed
• Stabilizer	*Proprietary*	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

• Stabilizer	*Proprietary*	Not Listed
• Trichloroethylene	79-01-6	Not Listed
• Stabilizer	*Proprietary*	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

• Stabilizer	*Proprietary*	Not Listed
• Trichloroethylene	79-01-6	Not Listed
• Stabilizer	*Proprietary*	Not Listed

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

• Stabilizer	*Proprietary*	Not Listed
• Trichloroethylene	79-01-6	0.1 % de minimis concentration
• Stabilizer	*Proprietary*	0.1 % de minimis concentration

U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing

• Stabilizer	*Proprietary*	Not Listed
• Trichloroethylene	79-01-6	Not Listed
• Stabilizer	*Proprietary*	Not Listed

U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification

• Stabilizer	*Proprietary*	Not Listed
• Trichloroethylene	79-01-6	Section 5, 0.1 % de minimus concentration
• Stabilizer	*Proprietary*	Not Listed

U.S. - TSCA (Toxic Substances Control Act) - Section 5(a)(2) - Chemicals with Significant New Use Rules (SNURs)

• Stabilizer	*Proprietary*	Not Listed
• Trichloroethylene	79-01-6	40 CFR 721.10851
• Stabilizer	*Proprietary*	Not Listed

United States - California

Environment

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

• Stabilizer	*Proprietary*	Not Listed
• Trichloroethylene	79-01-6	carcinogen, 4/1/1988
• Stabilizer	*Proprietary*	Not Listed

U.S. - California - Proposition 65 - Developmental Toxicity

• Stabilizer	*Proprietary*	Not Listed
• Trichloroethylene	79-01-6	developmental toxicity, 1/31/2014
• Stabilizer	*Proprietary*	Not Listed

U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)		
• Stabilizer	*Proprietary*	Not Listed
• Trichloroethylene	79-01-6	Not Listed
• Stabilizer	*Proprietary*	Not Listed
U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)		
• Stabilizer	*Proprietary*	Not Listed
• Trichloroethylene	79-01-6	14 µg/day NSRL (oral); 50 µg/day NSRL (inhalation)
• Stabilizer	*Proprietary*	Not Listed
U.S. - California - Proposition 65 - Reproductive Toxicity - Female		
• Stabilizer	*Proprietary*	Not Listed
• Trichloroethylene	79-01-6	Not Listed
• Stabilizer	*Proprietary*	Not Listed
U.S. - California - Proposition 65 - Reproductive Toxicity - Male		
• Stabilizer	*Proprietary*	Not Listed
• Trichloroethylene	79-01-6	male reproductive toxicity, 1/31/14
• Stabilizer	*Proprietary*	Not Listed

15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

15.3 Other Information

- WARNING: This product contains a chemical known to the State of California to cause cancer.

Section 16 - Other Information

Relevant Phrases (code & full text)

- H225 - Highly flammable liquid and vapour
  H302 - Harmful if swallowed
  H312 - Harmful in contact with skin
  H318 - Causes serious eye damage
  H331 - Toxic if inhaled
  H335 - May cause respiratory irritation
  H351 - Suspected of causing cancer.

Revision Date

- 26/January/2017

Preparation Date

- 19/February/2015

Disclaimer/Statement of Liability

- The technical data given herein 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. No guarantee is being given as to the end use performance. The product is sold on the basis that buyers test the product for their specific purposes. This information related to the material designated and may not be valid for such material used in combination with any other materials or in any process.

Key to abbreviations

NDA = No Data Available