Material Safety Data Sheet

Lubricant Penetrant

1. Product and company identification

Product name	:	Lubricant Penetrant
Supplier	:	Betco Corporation 1001 Brown Avenue Toledo, Ohio 43607 (800) 333-2156
Manufacturer	:	Betco Corporation 1001 Brown Avenue Toledo, Ohio 43607
Code	:	040
MSDS #	:	040
Validation date	:	4/20/2012.
Print date	:	4/20/2012.
In case of emergency	:	Chemtrec (800) 424-9300
Product type	:	Aerosol.

2. Hazards identification

Emergency overview

Physical state	:	Liquid. [Aerosol. Compressed gas.]
Color	:	Opaque. Brown.
Odor	:	Chlorinated hydrocarbon odour.
Signal word	:	WARNING!
Hazard statements	:	CAUSES EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
Precautionary measures	:	Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Do not breathe vapor or mist. Do not eat, drink or smoke when using this product. Avoid contact with eyes, skin and clothing. Use personal protective equipment as required. Wash thoroughly after handling.
OSHA/HCS status	:	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Routes of entry	:	Dermal contact. Eye contact. Inhalation.

Potential acute health effects

Inhalation	:	Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Ingestion	:	No known significant effects or critical hazards.
Skin	:	Severely irritating to the skin.
Eyes	:	Severely irritating to eyes. Risk of serious damage to eyes.

Potential chronic health effects

Chronic effects	:	Contains material that may cause target organ damage, based on animal data.
Carcinogenicity	:	Contains material which may cause cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity	:	No known significant effects or critical hazards.
Teratogenicity	:	No known significant effects or critical hazards.
Developmental effects	:	No known significant effects or critical hazards.
Fertility effects	:	No known significant effects or critical hazards.

2. Hazards identification

Target organs : Contains material which may cause damage to the following organs: kidneys, lungs, the nervous system, liver, mucous membranes, heart, brain, gastrointestinal tract, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea, nose/sinuses, testes, throat.

Medical conditions aggravated by over-exposure : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

3. Composition/information on ingredients

Name	CAS number	%
tetrachloroethylene	127-18-4	40 - 60
Stoddard solvent	8052-41-3	20 - 40
trichloroethylene	79-01-6	5 - 10
Carbon dioxide	124-38-9	1 - 5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

Eye contact Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately. In case of contact with eyes, rinse immediately with plenty of water.

Skin contact In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Inhalation Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Protection of first-aiders No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

Flammability of the product : In a fire or if heated, a pressure increase will occur and the container may burst. Bursting aerosol containers may be propelled from a fire at high speed.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

5. Fire-fighting measures

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
halogenated compounds
carbonyl halides

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. In the case of aerosols being ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. If a large number of containers are ruptured, treat as a bulk material spillage according to the instructions in the clean-up section. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods for cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7. Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Avoid exposure - obtain special instructions before use. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing gas. Avoid breathing vapor or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Empty containers retain product residue and can be hazardous.

Storage : Do not store above the following temperature: 49°C (120.2°F). Store in accordance with local regulations. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

Ingredient	Exposure limits
tetrachloroethylene	**ACGIH TLV (United States, 2/2010).** TWA: 25 ppm 8 hour(s). TWA: 170 mg/m³ 8 hour(s). STEL: 100 ppm 15 minute(s). STEL: 685 mg/m³ 15 minute(s). **OSHA PEL 1989 (United States, 3/1989).** TWA: 25 ppm 8 hour(s). TWA: 170 mg/m³ 8 hour(s). **OSHA PEL Z2 (United States, 11/2006).** TWA: 100 ppm 8 hour(s). CEIL: 200 ppm AMP: 300 ppm 5 minute(s).
Stoddard solvent	**ACGIH TLV (United States, 2/2010).** TWA: 100 ppm 8 hour(s). TWA: 525 mg/m³ 8 hour(s). **OSHA PEL 1989 (United States, 3/1989).** TWA: 100 ppm 8 hour(s). TWA: 525 mg/m³ 8 hour(s). **NIOSH REL (United States, 6/2009).** TWA: 350 mg/m³ 10 hour(s). CEIL: 1800 mg/m³ 15 minute(s). **OSHA PEL (United States, 6/2010).** TWA: 500 ppm 8 hour(s). TWA: 2900 mg/m³ 8 hour(s).
trichloroethylene	**OSHA PEL 1989 (United States, 3/1989).** TWA: 50 ppm 8 hour(s). TWA: 270 mg/m³ 8 hour(s). STEL: 200 ppm 15 minute(s). STEL: 1080 mg/m³ 15 minute(s). **OSHA PEL Z2 (United States, 11/2006).** TWA: 100 ppm 8 hour(s). CEIL: 200 ppm AMP: 300 ppm 5 minute(s). **ACGIH TLV (United States, 2/2010).** TWA: 10 ppm 8 hour(s). STEL: 25 ppm 15 minute(s).
Carbon dioxide	**ACGIH TLV (United States, 2/2010).** TWA: 5000 ppm 8 hour(s). TWA: 9000 mg/m³ 8 hour(s). STEL: 30000 ppm 15 minute(s). STEL: 54000 mg/m³ 15 minute(s). **OSHA PEL 1989 (United States, 3/1989).** TWA: 10000 ppm 8 hour(s). TWA: 18000 mg/m³ 8 hour(s). STEL: 30000 ppm 15 minute(s). STEL: 54000 mg/m³ 15 minute(s). **NIOSH REL (United States, 6/2009).** TWA: 5000 ppm 10 hour(s). TWA: 9000 mg/m³ 10 hour(s). STEL: 30000 ppm 15 minute(s). STEL: 54000 mg/m³ 15 minute(s). **OSHA PEL (United States, 6/2010).** TWA: 5000 ppm 8 hour(s). TWA: 9000 mg/m³ 8 hour(s).

8. Exposure controls/personal protection

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory : 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.

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. <1 hours (breakthrough time): disposable vinyl

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. Recommended: safety glasses

Skin : 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.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Personal protective equipment (Pictograms) :

9. Physical and chemical properties

Physical state : Liquid. [Aerosol. Compressed gas.]

Flash point : Closed cup: Not applicable.

Color : Opaque. Brown.

Odor : Chlorinated hydrocarbon odour.

Relative density : 1.21

Solubility : Insoluble in the following materials: cold water and hot water.

Aerosol product

Type of aerosol : Spray

10. Stability and reactivity

Chemical stability : The product is stable.

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

10. Stability and reactivity

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

11. Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
tetrachloroethylene	LD50 Oral	Rat	2629 mg/kg	-
trichloroethylene	LC50 Inhalation Vapor	Rat	140700 mg/m3	1 hours
	LD50 Dermal	Rabbit	>20 g/kg	-
	LD50 Oral	Rat	4920 mg/kg	-

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
tetrachloroethylene	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	162 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Severe irritant	Rabbit	-	24 hours 810 milligrams	-
Stoddard solvent	Eyes - Mild irritant	Human	-	100 parts per million	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
trichloroethylene	Eyes - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Skin - Severe irritant	Rabbit	-	24 hours 2 milligrams	-

Conclusion/Summary : Not available.

Sensitizer

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
tetrachloroethylene	A3	2A	-	+	Possible	-
trichloroethylene	A2	2A	-	+	Possible	-

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

12. Ecological information

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

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
tetrachloroethylene	Acute EC50 504 ppm Marine water	Algae - Skeletonema costatum	96 hours
	Acute EC50 3.64 mg/L Fresh water	Algae - Chlamydomonas reinhardtii - Exponential growth phase - 7 days	72 hours
	Acute EC50 7500 ug/L Fresh water	Daphnia - Daphnia magna - Instar - <24 hours	48 hours
	Acute LC50 3.5 mg/L Marine water	Crustaceans - Elminius modestus	48 hours
	Acute LC50 4000 ug/L Fresh water	Fish - Jordanella floridae - Juvenile (Fledgling, Hatchling, Weanling) - 2 to 4 months	96 hours
	Chronic NOEC >0.4 mg/L Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 500 ug/L Fresh water	Fish - Pimephales promelas - Larvae - 30 to 35 days	32 days
trichloroethylene	Acute EC50 95000 ug/L Marine water	Algae - Skeletonema costatum	96 hours
	Acute EC50 36.5 mg/L Fresh water	Algae - Chlamydomonas reinhardtii - Exponential growth phase - 7 days	72 hours
	Acute LC50 20 mg/L Marine water	Crustaceans - Elminius modestus	48 hours
	Acute LC50 18000 ug/L Fresh water	Daphnia - Daphnia magna - <=24 hours	48 hours
	Acute LC50 3100 ug/L Fresh water	Fish - Jordanella floridae - Juvenile (Fledgling, Hatchling, Weanling) - 2 to 4 months	96 hours
	Chronic NOEC >1.384 mg/L Fresh water	Daphnia - Daphnia magna	21 days

Conclusion/Summary : Not available.

Persistence/degradability

Conclusion/Summary : Not available.

13. Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	Not available.	Consumer commodity. Marine pollutant (tetrachloroethylene)	ORM-D	-		**Limited quantity** Yes.
TDG Classification	Not available.	Consumer commodity Compounds, Cleaning Liquid Limited quantity ORM-D	2.2	-		**Explosive Limit and Limited Quantity Index** 1
Mexico Classification	Not available.	Consumer commodity ORM-D	2.2	-		-
ADR/RID Class	UN1950	AEROSOLS	2	-		**Tunnel code** (E)
IMDG Class	UN1950	AEROSOLS. Marine pollutant (tetrachloroethylene)	2.2	-		-
IATA-DGR Class	UN1950	Aerosols, non-flammable	2.2	-		-

PG* : Packing group

15. Regulatory information

HCS Classification : Irritating material
Target organ effects

U.S. Federal regulations : **TSCA 8(a) IUR Exempt/Partial exemption**: Not determined
United States inventory (TSCA 8b): All components are listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: tetrachloroethylene; Stoddard solvent; Carbon dioxide; trichloroethylene
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: tetrachloroethylene: Immediate (acute) health hazard, Delayed (chronic) health hazard; Stoddard solvent: Fire hazard, Immediate (acute) health hazard; Carbon dioxide: Sudden release of pressure, Immediate (acute) health hazard, Delayed (chronic) health hazard; trichloroethylene: Immediate (acute) health hazard, Delayed (chronic) health hazard

Clean Water Act (CWA) 307: tetrachloroethylene; trichloroethylene

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

15. Regulatory information

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 313

	Product name	CAS number	Concentration
Form R - Reporting requirements	tetrachloroethylene trichloroethylene	127-18-4 79-01-6	40 - 60 5 - 10
Supplier notification	tetrachloroethylene trichloroethylene	127-18-4 79-01-6	40 - 60 5 - 10

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: TETRACHLOROETHYLENE; STODDARD SOLVENT; TRICHLOROETHYLENE; CARBON DIOXIDE

New York : The following components are listed: Ethylene, tetrachloro-; Trichloroethylene

New Jersey : The following components are listed: TETRACHLOROETHYLENE; ETHENE, TETRACHLORO-; STODDARD SOLVENT; TRICHLOROETHYLENE; ETHENE, TRICHLORO-; CARBON DIOXIDE; CARBONIC ACID GAS

Pennsylvania : The following components are listed: ETHENE, TETRACHLORO-; STODDARD SOLVENT; ETHENE, TRICHLORO-; CARBON DIOXIDE

California Prop. 65

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

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
tetrachloroethylene trichloroethylene	Yes. Yes.	No. No.	Yes. 50 µg/day (ingestion) 80 µg/day (inhalation)	No. No.

Canada inventory : All components are listed or exempted.

International regulations

International lists : **Australia inventory (AICS)**: All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: Not determined.
Korea inventory: All components are listed or exempted.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.

Chemical Weapons Convention List Schedule I Chemicals : Not listed

Chemical Weapons Convention List Schedule II Chemicals : Not listed

Chemical Weapons Convention List Schedule III Chemicals : Not listed

16. Other information

Label requirements : CAUSES EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

Hazardous Material Information System (U.S.A.) :

Health	*	2
Flammability		0
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.) :

Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Date of printing : **4/20/2012.**

Date of issue : 4/20/2012.

Date of previous issue : No previous validation.

Version : 0.01

Prepared by : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.