



MATERIAL SAFETY DATA SHEET

TOYOTA BRAKE CLEANER

MSDS No.:TCI-10012

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MSDS Revision Date (dd/mm/yyyy): 02/02/2012

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION







Product identifier : TOYOTA BRAKE CLEANER

Trade Name : Brake Cleaner, Aerosol

Chemical Name : Petroleum distillates

Product Use : Automotive - Cleaner

Part No : C0009-00137

Chemical response card (CRC) number			A6
RESPONSE TEAM PPE			
WHMIS			
TDG			

Manufacturer's name and address:

Shrader Canada Ltd.
830 Progress Crt.
Oakville, ON, Canada
L6L 6K1
Phone: (905) 847 0222

Emergency Tel : CANUTEC 1-613-996-6666

Supplier's / Distributor's name and Address:

TOYOTA CANADA INC.
1 Toyota Place
Toronto, ON, Canada
M1H 1H9
Phone: (416) 438 6320

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredients</u>	<u>CAS #</u>	<u>% (weight)</u>	<u>OSHA PEL</u>		<u>ACGIH TLV</u>	
			<u>PEL</u>	<u>STEL</u>	<u>TWA</u>	<u>STEL</u>
Heptane	142-82-5	60.0 - 100.0	500 ppm ; 2000 mg/m ³	N/Av	400 ppm (listed under Heptane, all isomers)	500 ppm (listed under Heptane, all isomers)
Isopropanol	67-63-0	1.0 - 5.0	400 ppm ; 980 mg/m ³	N/Av	200 ppm	400 ppm
Carbon dioxide	124-38-9	1.0 - 5.0	5000 ppm ; 9000 mg/m ³	N/Av	5000 ppm	30000 ppm

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Extremely flammable aerosol Contents under pressure. Highly flammable liquid and vapour. Vapour may cause flash fire! Keep away from heat, sparks, and open flames. Do not puncture or incinerate. Contains petroleum solvents - harmful or fatal if swallowed.

Routes of Entry: *Inhalation:* YES *Skin Absorption:* YES *Skin & Eyes:* YES *Ingestion:* YES

Signs and symptoms of short-term (acute) exposure

Inhalation: No exposure symptoms reported under normal conditions of use.

Skin: May irritate skin.

Eyes: Causes eye irritation.

Ingestion: No exposure symptoms reported under normal conditions of use.

Potential acute health effects

Eyes: Moderate to severe irritation.

Skin: Moderate to severe irritation.

Inhalation: Inhaling high concentrations may cause respiratory irritation and central nervous system depression, with results ranging from dizziness and headache to unconsciousness.

Ingestion: Ingestion may cause symptoms similar to inhalation. Ingestion of large amounts may cause stomach irritation. Aspiration into the lungs during swallowing or subsequent vomiting may cause chemical pneumonitis, which can be fatal.

Potential chronic health effects



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- Target organs** : Reports have associated repeated and prolonged occupational overexposure to various organic solvents with internal organ, brain and nervous system damage. Prolonged overexposure to solvents may cause adverse effects to the liver, urinary, blood-forming, cardiovascular and reproductive systems.
- Toxicological data** : None reported by the manufacturer.
- Medical conditions aggravated by overexposure** : See Section 11.
- Other important hazards** : None reported by the manufacturer.
- Other important hazards** : Refer to Section 11 for carcinogenic status. Refer to Section 12 for environmental hazards.

SECTION 4 - FIRST AID MEASURES

- Inhalation** : Remove exposed person to fresh air if adverse effects, such as breathing difficulty arise . If breathing is difficult, give oxygen by qualified medical personnel only . If breathing has stopped, give artificial respiration. Seek immediate medical attention/advice. Provide supportive treatment, keeping victim warm and quiet.
- Skin** : Remove contaminated clothing. Wash affected areas with soap and water . If irritation persists, seek prompt medical attention. Launder clothing before reuse.
- Eyes** : Flush eyes thoroughly with running water for at least 20 minutes, holding eyelids open to ensure complete flushing. Seek immediate medical attention/advice.
- Ingestion** : Do NOT induce vomiting. Call a physician or Poison Control Centre immediately. Seek immediate medical attention/advice. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration.
- First aid notes to physician** : Not available.

SECTION 5 - FIRE FIGHTING MEASURES

- Flash point** : -8 °C **Flash point (Method)** : Not available.
- Auto-ignition Temperature** : 399°C
- Upper flammable limit (% by vol.)** : 12.7 **Lower flammable limit (% by vol.)** : 2.0
- Unusual fire and explosion hazards** : Contents under pressure. Closed containers may build up pressure when exposed to heat and flame. Flashback is possible.
- Means of extinction** : Dry chemical, alcohol foam, and indirect water spray or fog.
- Special fire-fighting procedures/equipment** : Keep containers cool until after the fire is out. Prevent runoff from fire control or dilution from entering sewers, drains, drinking water supply or any natural waterway. Firefighters should wear full-face, self-contained breathing apparatus (MSHA / NIOSH approved or the equivalent) and impervious clothing.
- Conditions of flammability** : Highly flammable liquid and vapour Vapours are heavier than air, and may travel or be moved along the ground to an ignition source at locations distant from material handling. Flame projection >100 cm. Aerosol will flashback.
- Sensitivity to mechanical impact/static discharge** : Take precautionary measures against static discharge . Not expected to be sensitive to mechanical impact.
- Hazardous combustion products** : Carbon dioxide, carbon monoxide and other unidentified organic compounds.
- Oxidizing properties** : None.
- OSHA Classification** : Flammable aerosol.
- NFPA** : *Health:* 2 *Fire:* 3 *Instability:* 1 *Other Hazards:* none

SECTION 6 - ACCIDENTAL RELEASE MEASURES

- Spill response/cleanup** : Secure spill area, remove or minimize all sources of ignition, and maximize ventilation. Stop spill or leak at source if safely possible. Deny entry to all unprotected individuals. Recover free liquid or cover with inert absorbent material and place into appropriate container for disposal. Contact appropriate local and/or provincial authorities for assistance and/or reporting requirements.
- Personal precautions** : Individuals involved in the clean up must wear appropriate personal protective equipment.
- Environmental precautions** : If necessary, dike well ahead of the spill to prevent runoff into drains, sewers, or any natural waterway or drinking supply.



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Prohibited materials : Avoid strong oxidizers.

Special spill response procedures
: None.

SECTION 7 - HANDLING AND STORAGE

General Hygiene Procedures

: Use normal hygiene practices. Avoid breathing vapours. Avoid contact with skin. Wash hands thoroughly after using this product, and before eating, drinking or smoking.

Storage requirements : Contents under pressure. This product will become dangerously flammable at temperatures above 40 °C. Do not store in unmarked containers or storage devices.

Handling procedures : Use and store in a cool, dry, well-ventilated area. Keep away from excessive heat, open flames, sparks and other possible sources of ignition. Do not use on vehicles unless cool. Extremely flammable aerosol. Do not use on vehicles unless cool.

Special provisions : Readily available emergency fire, first aid and spill response equipment and/or measures are highly recommended.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

Ventilation and engineering measures

: General mechanical ventilation and local exhaust is required for use with this product.

Physical protection : *Respiratory:* A respiratory protection program that meets CSA Z94.4-02 requirements must be followed whenever workplace conditions warrant use of a respirator.

Eye: Safety glasses with side shields should be used with this product. If splashing is anticipated, splash goggles and a faceshield are recommended. Do not wear contact lenses.

Hand: Where contact is likely, impervious gloves are recommended. Do not wear rings, watches or jewelry that could entrap the material against the skin.

Other: Emergency showers and eyewash facilities should be nearby. The selection of personal protective equipment will vary depending on the conditions of use.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical state : Aerosol

Odour : N/Av

Odour threshold : Not available.

Appearance : N/Av

Specific gravity : 0.700 @ 15 °C

Solubility in water : Negligible

Vapour pressure (mmHg @ 20 C / 68 F)

Vapour density (Air = 1)

: Not available.

: > 1

Boiling point : Not available.

Melting/Freezing point : Not available.

Evaporation rate (n-Butyl acetate = 1)

pH : Not applicable.

: Not available.

Coefficient of water/oil distribution

Volatiles (% by weight) : 100

: Not available.

Molecular Weight

Viscosity : < 14 cSt

: Not available.

SECTION 10 - REACTIVITY AND STABILITY DATA

Stability and reactivity : Stable under normal conditions.

Hazardous polymerization

: Will not occur.

Conditions to avoid : Open flames, sparks, high heat and close proximity to incompatible substances.

Hazardous decomposition products

: Similar to hazardous combustion products.

Materials To Avoid And Incompatibility

: Avoid strong oxidizers.

SECTION 11 - TOXICOLOGICAL INFORMATION



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<u>Ingredients</u>	<u>LC50</u>	<u>LD50</u>	
	<u>inh, rat</u>	<u>dermal, rabbit</u>	<u>oral, rat</u>
Heptane	25000ppm	N/Av	> 15000 mg/kg
Isopropanol	17000 ppm	12890 mg/kg	4720 mg/kg
Carbon dioxide	N/Av	N/Av	N/Av

Carcinogenic status : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive effects : Not expected to have other reproductive effects.

Teratogenicity : Not expected to be a teratogen.

Mutagenicity : Not expected to be mutagenic in humans.

Sensitization to material : Not expected to be a sensitizer.

Synergistic materials : Isopropanol increases the hepatotoxic effects of chlorinated aliphatic hydrocarbons.

Embryotoxicity : Not expected to be embryotoxic.

Irritancy of product : Moderate to severe skin irritant. Moderate to severe eye irritant.

Biological exposure indices : Not available.

Medical recommendations : Treat symptomatically.

Special remark other toxic effects : Prolonged overexposure to solvents may cause adverse effects to the liver, urinary, blood -forming, cardiovascular and reproductive systems. Reports have associated repeated and prolonged occupational overexposure to various organic solvents with internal organ, brain and nervous system damage.

SECTION 12 - ECOLOGICAL INFORMATION

Persistence : The manufacturer has not reported detailed studies on the environmental fate of the material. However, it is recommended not to allow the material to enter the environment.

Plant animal effects : See Section 2.

Aquatic toxicity : Toxic to aquatic organisms. Aromatic hydrocarbons may be bioaccumulative but they have no food chain concentration potential. See Section 2.
 Heptane
 LC50 (96 hr) cichlid fish: 375.0 mg/L
 LC50 (24 hr) goldfish: 4.0 mg/L
 LC50 (24 hr) mosquito fish: 4900 mg/L
 Isopropanol
 LC50 (96 hr) fathead minnow: (31 days old) 61200 mg/L Cond: flow-through
 LC50 (96 hr) fathead minnow: (29 days old) 94900 mg/L Cond: flow-through
 EC50 (5 min) Photobacterium phosphorem: 35390 mg/L

Other Adverse Environmental Effects : None known.

SECTION 13 - DISPOSAL CONSIDERATIONS

Handling for Disposal : See Section 7 (Handling and Storage) for further details.

Methods of Disposal : Dispose of in accordance with federal, provincial and local hazardous waste laws. Reuse or recycling should be given priority over disposal.

Special consideration : If the material is unsuitable for recycling or reclamation, enclosed-controlled incineration is recommended unless otherwise prohibited.

SECTION 14 - TRANSPORTATION INFORMATION

<u>Regulatory Information</u>	<u>UN Number</u>	<u>Shipping Name</u>	<u>Class</u>	<u>Packing Group</u>	<u>Label</u>	<u>Additional information</u>



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TDG	UN1950	AEROSOLS, flammable	Limited quantity	none		May be shipped as LIMITED QUANTITY when transported in containers no larger than 1.0 Litre, in packages not exceeding 30 kg gross mass.
49CFR/DOT	None	Consumer Commodity	ORM-D	none		Must be a consumer-type product, in Limited Quantity size, no larger than 1 L per can. Package weight must not exceed 30 kg gross.
ICAO/IATA	UN1950	Aerosols, flammable	2.1	none	 	May be shipped as Limited Quantity when shipped per packing instruction Y203. Inner packages may not exceed 1L; total per package may not exceed 30 kg.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

TSCA: All listed ingredients appear on the Toxic Substances Control Act (TSCA) inventory.
 This product may be subject to SARA notification requirements, since it contains Toxic Chemical constituents above their de minimus concentrations. This product contains: Isopropanol

US State Right to Know Laws:

California Proposition 65: To the best of our knowledge, this product does not contain any chemicals known to the State of California to cause cancer or reproductive harm.

Canadian Information:

Canadian WHMIS Classification: A, B5, D2B
 Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).
 This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and this MSDS contains all the information required by the CPR.

SECTION 16 - OTHER INFORMATION

Terms & Definitions:

Please see the concluding page of the Material Safety Data Sheet.

Disclaimer:

This Material Safety Data Sheet complies with Health Canada's Workplace Hazardous Materials Information System (WHMIS) and U.S. OSHA Hazard Communication Standard, 29 CFR §1910.1200. To the best of ICC or Toyota Canada's knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either expressed or implied are provided. The information contained herein relates only to the specific product. Contact the manufacturer for additional information.

Preparation Date (dd/mm/yyyy)

: 12/01/2005

MSDS Reviewed Date (dd/mm/yyyy)

: 02/02/2012

Revision No.

: 4



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Revision Information

- : (M)SDS sections updated
1. Product and Company Identification
 2. Composition/information on ingredients
 3. Hazards identification
 7. HANDLING AND STORAGE
 8. Exposure controls / personal protection
 9. Physical and chemical properties
 10. Stability and reactivity
 11. Toxicological information
 15. Regulatory information

<p><u>Prepared for:</u> Toyota Canada, Inc. Parts Operations Department 1 Toyota Place Toronto, ON, Canada M1H 1H9 Phone: 1-416-438-6320 Hours of operation: 8:15 - 5:00 EST, Mon-Fri</p>	
<p><u>Prepared by:</u> ICC The Compliance Center Inc. http://www.thecompliancecenter.com</p>	



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DEFINITION OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these that are commonly used include the following:

GENERAL INFORMATION:

CAS No. Chemical Abstract Service Number

EXPOSURE LIMITS IN AIR:

ACGIH American Conference on Governmental Industrial Hygienists
 TLV Threshold Limit Value
 OSHA U.S. Occupational Safety and Health Administration
 PEL Permissible Exposure Limit
 IDLH Immediately Dangerous to Life and Health

FLAMMABILITY LIMITS IN AIR:

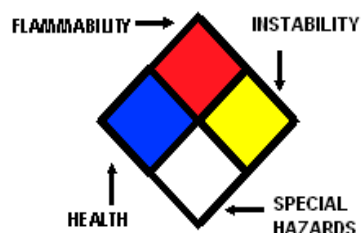
Autoignition Temperature Minimum temperature required to initiate combustion in air with no other source of ignition
 LEL Lower Explosive Limit- lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source
 UEL Upper Explosive Limit - highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source
 TCC Tagliabue Closed Cup
 COC Cleveland Open Cup

FIRST AID MEASURES:

CPR Cardiopulmonary resuscitation - method in which a person whose heart has stopped receives manual chest compressions and breathing to circulate blood and provide oxygen to the body.

NFPA HAZARD RATINGS:

0 Minimal Hazard
 1 Slight Hazard
 2 Moderate Hazard
 3 Severe Hazard
 4 Extreme Hazard



W Water Reactive
 OX Oxidizer

PERSONAL PROTECTION SYMBOLS:



Safety Glasses



Splash Goggles



Face Shield & Eye Protection



Gloves



Boots



Synthetic Apron



Full Suit



Dust Respirator



Vapor Respirator



Dust & Vapor



Full Face Respirator



Airline Hood/Mask

Note: the dotted circle indicates that this respiratory protective equipment is required for high concentrations or for large volume spills or releases of product.

TOXICOLOGICAL INFORMATION:

LD50 Lethal Dose (solids & liquids) which kills 50% of the exposed animals
 LC50 Lethal concentration (gases) which kills 50% of the exposed animals
 ppm Concentration expressed in parts of material per million parts
 TDLo Lowest dose to cause a symptom
 TCLo Lowest concentration to cause a symptom
 LDlo, LClo Lowest dose (or concentration) to cause lethal or toxic effects
 IARC International Agency for Research on Cancer
 MSHA Mine Safety and Health Administration
 NIOSH National Institute for Occupational Safety and Health
 NTP National Toxicology Program
 RTECS Registry of Toxic Effects of Chemical Substances
 BCF Bioconcentration Factor
 TLm Median threshold limit
 log KOW or log KOC Coefficient of Oil/Water Distribution

OTHER STANDARD ABBREVIATIONS:

N/Av Not Available
 N/Ap Not Applicable
 NR No Results
 NE Not Established
 ND Not Determined
 ML Maximum Limit
 SCBA Self-Contained Breathing Apparatus

REGULATORY INFORMATION:

WHMIS Canadian Workplace Hazardous Material Information System
 DOT U.S. Department of Transportation
 TC Transport Canada
 EPA U.S. Environmental Protection Agency
 DSL Canadian Domestic Substance List
 NDSL Canadian Non-Domestic Substance List
 TSCA U.S. Toxic Substance Control Act
 TDG Transportation of Dangerous Goods Regulations
 49 CFR Title 49 of US Code of Federal Regulations
 ICAO International Civil Aviation Organization
 IATA International Air Transport Association
 IMDG International Maritime Dangerous Goods Code

NATIONAL FIRE PROTECTION ASSOCIATION: NFPA