PRODUCT NAME: ABRO Brake and Brake Parts Cleaner
PRODUCT NUMBER/SIZE: BC-780 **Revision Date: 1/23/2017**

SECTION 1
Identification of the Substance and of the Company/Undertaking

MANUFACTURER'S NAME: ABRO INDUSTRIES, INC.

ADDRESS: 3580 Blackthorn Court
South Bend, IN 46628
USA

PRODUCT DESCRIPTION: Brake Cleaner

COMPANY PHONE: 574-232-8289

EMERGENCY 24-HR TELEPHONE: Chemtrec: US/Canada 1-800-424-9300
International +1-703-527-3887

SECTION 2
Hazards Identification

HMIS: Health 2 Flamm. 0 React. 0 **NFPA:** Tox. 2 Flamm. 0 React. 0

Classification:

Physical hazards	Gases under pressure	Compressed gas
Health hazards	Carcinogenicity	Category 2
OSHA defined hazards	Not classified.	

Label Pictogram(s):

Signal Word: WARNING

Hazard Phrases:
Contains gas under pressure; may explode if heated. Suspected of causing cancer.

Precautionary Phrases:
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection.

Response:
If exposed or concerned: Get medical advice/attention.

Storage / Disposal:
Store locked up. Protect from sunlight. Store in a well-ventilated place. Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)	None known
Supplemental Information	None

SECTION 3
Composition/Information on Ingredients

COMPONENTS	CAS Number	Percent by weight
Perchloroethylene	127-18-4	90-100%
Carbon dioxide	124-38-9	2.5-10%
Carbon Tetrachloride	56-23-5	0.1-1

SECTION 4
First Aid Measures

First Aid Measures

Immediate Medical Attention:	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
Eye Contact	Rinse with water. Get medical attention if irritation develops and persists.
Skin Contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Ingestion	Not likely, due to the form of the product.
Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Most important symptoms/effects, acute and delayed:	Headache. Dizziness. Nausea.
General Information:	IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

SECTION 5
Fire Fighting Measures

Extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable Extinguishing media	None known.
Specific hazards arising from the chemical:	During fire, gases hazardous to health may be formed.
Protective Equipment and Precautions for firefighters:	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In case of fire: Stop leak if safe to do so. Do not move cargo or vehicle if cargo has been exposedto heat. Move containers from fire area if you can do so without risk. Containers should be cooled with water to prevent vapor pressure build up. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.

Specific methods	Cool containers exposed to flames with water until well after the fire is out.
General fire hazards	Contents under pressure. Pressurized container may explode when exposed to heat or flame.

SECTION 6
Accidental Release Measures

Personal precautions, protective equipment and emergency procedures:	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Wear appropriate protective equipment and clothing during clean-up. Emergency personnel need self-contained breathing equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods/materials for containment and cleanup:	Refer to attached safety data sheets and/or instructions for use. Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Isolate area until gas has dispersed. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. For waste disposal, see section 13 of the SDS.
Environmental precautions:	Avoid discharge into drains, water courses or onto the ground.

SECTION 7
Handling and Storage

Precautions for Safe Handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Ground and bond containers when transferring material. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Suck back of water into the container must be prevented. Do not allow backfeed into the container. Purge air from system before introducing gas. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Do not re-use empty containers. Avoid prolonged exposure. Should be handled in closed systems, if possible. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for Safe Storage	Level 1 Aerosol Store locked up. Contents under pressure. Do not expose to heat or store at temperatures above 120°F/49°C as can may burst. Do not puncture,

incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. Store in a well-ventilated place. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Stored containers should be periodically checked for general condition and leakage. Store away from incompatible materials (see Section 10 of the SDS).

SECTION 8
Exposure Controls/Personal Protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Carbon Dioxide (CAS 124-38-9)	PEL	9000 mg/m3
		5000 ppm

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value
Carbon Tetrachloride (CAS 56-23-5)	Ceiling	25 ppm
	TWA	10 ppm
Perchloroethylene (CAS 127-18-4)	Ceiling	200 ppm
	TWA	100 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Carbon Dioxide (CAS 124-38-9)	STEL	30000 ppm
	TWA	5000 ppm
Carbon Tetrachloride (CAS 56-23-5)	STEL	10 ppm
	TWA	5 ppm
Perchloroethylene (CAS 127-18-4)	STEL	100 ppm
	TWA	25 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Carbon Dioxide (CAS 124-38-9)	STEL	54000 mg/m3
		30000 ppm
	TWA	9000 mg/m3
		5000 ppm
Carbon Tetrachloride (CAS 56-23-5)	STEL	12.6 mg/m3
		2 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Perchloroethylene (CAS 127-18-4)	0.5 mg/l	Tetrachloroethylene	Blood	*
	3 ppm	Tetrachloroethylene	End-exhaled air	*

* - For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

Carbon Tetrachloride (CAS 56-23-5) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Carbon Tetrachloride (CAS 56-23-5) Skin designation applies.
Perchloroethylene (CAS 127-18-4) Skin designation applies.

US ACGIH Threshold Limit Values: Skin designation
Carbon Tetrachloride (CAS 56-23-5) Can be absorbed through the skin.

Appropriate engineering Controls
Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment
Eye/face protection If contact is likely, safety glasses with side shields are recommended.
Skin protection
Hand protection Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.
Other Wear suitable protective clothing. Use of an impervious apron is recommended.
Respiratory protection If permissible levels are exceeded use NIOSH mechanical filter / organic vapor cartridge or an air-supplied respirator.
Thermal hazards Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations Observe any medical surveillance requirements. When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

SECTION 9
Physical and Chemical Properties

Appearance	
Physical State:	Gas
Form:	Aerosol. Compressed gas.
Color:	Not available.
Odor:	Not available
Odor Threshold:	Not available
pH:	Not available
Melting Point/Freezing Point:	Not available
Initial boiling point & boiling range:	Not available
Flash Point:	Not available
Evaporation rate:	Not available
Flammability (solid, gas)	Not available
Upper/lower flammability or explosive limits	Not available
Vapor pressure	Not available
Vapor density	Not available

Relative density / Specific gravity	Not available
Solubility	Not available
Partition Coefficient n-Octanol/Water	Not available
Auto-ignition Temperature:	Not available
Decomposition Temperature:	Not available
Viscosity:	Not available
Other information:	Not explosive
Explosive properties	
Oxidizing properties	Not oxidizing
Specific gravity	1.619 estimated

SECTION 10
Stability and Reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Hazardous polymerization does not occur.
Conditions to avoid	Heat. Contact with incompatible materials.
Incompatibilities:	Strong oxidizing agents.
Hazardous decomposition products:	Hydrogen chloride.

SECTION 11
Toxicological Information

Likely Routes of Exposure:

Inhalation Prolonged inhalation may be harmful.
Skin contact No adverse effects due to skin contact are expected.
Eye contact Direct contact with eyes may cause temporary irritation.
Ingestion Expected to be a low ingestion hazard.

Symptoms: Headache. Dizziness. Nausea.

Information on toxicological effects
Acute toxicity

Components	Species	Test Results
Perchloroethylene (CAS 127-18-4)		
Acute		
Inhalation		
LC50	Dog; Mouse; Rabbit; Rat	3000 ppm
Oral		
LD50	Cat; Dog; Mouse; Rabbit; Rat	> 1500 mg/kg
	Rat	3005 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye Irritation Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization
Respiratory sensitization Not a respiratory sensitizer.
Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Suspected of causing cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity
Carbon Tetrachloride (CAS 56-23-5) 2B Possibly carcinogenic to humans.
Perchloroethylene (CAS 127-18-4) 2A Probably carcinogenic to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not regulated

US. National Toxicology Program (NTP) Report on Carcinogens
Carbon Tetrachloride (CAS 56-23-5) Reasonably Anticipated to be a Human Carcinogen.
Perchloroethylene (CAS 127-18-4) Reasonably Anticipated to be a Human Carcinogen.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not likely, due to the form of the product.
Chronic effects Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

SECTION 12
Ecological Information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components		Species	Test Results
Carbon Tetrachloride (CAS 56-23-5)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	9.68 - 11.3 mg/l, 96 hours
Perchloroethylene (CAS 127-18-4)			
Aquatic			
Crustacea	EC50	Daphnia	7.55 mg/L, 48 Hours
		Water flea (Daphnia magna)	6.1 - 9 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	4.82 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

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

Bioaccumulative potential
Partition coefficient n-octanol / water (log Kow)

Carbon Tetrachloride	2.83
Perchloroethylene	3.4

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13
Disposal Considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations:	Dispose in accordance with all applicable regulations.
Hazardous Waste Code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

SECTION 14
Transport Information

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

U.S. DOT	UN/ID Number:	UN1950
	Proper shipping name:	Aerosols, non-flammable
	Hazard class:	2.2
	Packing Group:	None
	Exceptions:	May be shipped as a limited quantity
IMO/IMDG	UN/ID Number:	UN1950
	Proper shipping name:	Aerosols
	Hazard class:	2.2
	Packing Group:	None
	Exceptions:	May be shipped as a limited quantity

ICAO/IATA	UN/ID Number:	UN1950
	Proper shipping name:	Aerosols
	Hazard Class:	2.2
	Packing Group:	None
	Special Precautions:	ERG 2L

General Information
Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers: Ensure that containers are firmly secured. Ensure cylinder valve is closed and not leaking. Ensure valve outlet cap nut or plug (where provided) is correctly fitted. Ensure valve protection device (where provided) is correctly fitted. Ensure adequate ventilation. Ensure compliance with applicable regulations.

SECTION 15
Regulatory Information

US federal regulations
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)
Carbon Tetrachloride (CAS 56-23-5) Listed.
Perchloroethylene (CAS 127-18-4) Listed.

SARA 304 Emergency release notification
Not regulated.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)
Hazard categories

Immediate Hazard - No
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - Yes
Reactivity Hazard – No

SARA 302 Extremely hazardous substance
Not listed

SARA 311/312 Hazardous Chemical No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Perchloroethylene	127-18-4	90 - 100
Carbon Tetrachloride	56-23-5	0.1 – 1

Other federal regulations
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Carbon Tetrachloride (CAS 56-23-5)

Perchloroethylene (CAS 127-18-4)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.

Safe Drinking Water Act Not regulated.
(SDWA)

US state regulations
US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)
Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))
Carbon Tetrachloride (CAS 56-23-5)
Perchloroethylene (CAS 127-18-4)
US. Massachusetts RTK - Substance List
Carbon Dioxide (CAS 124-38-9)
Carbon Tetrachloride (CAS 56-23-5)
Perchloroethylene (CAS 127-18-4)
US. New Jersey Worker and Community Right-to-Know Act
Carbon Dioxide (CAS 124-38-9)
Carbon Tetrachloride (CAS 56-23-5)
Perchloroethylene (CAS 127-18-4)
US. Pennsylvania Worker and Community Right-to-Know Law
Carbon Dioxide (CAS 124-38-9)
Carbon Tetrachloride (CAS 56-23-5)
Perchloroethylene (CAS 127-18-4)
US. Rhode Island RTK
Carbon Tetrachloride (CAS 56-23-5)
Perchloroethylene (CAS 127-18-4)

US. California Proposition 65
WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance
Carbon Tetrachloride (CAS 56-23-5) Listed: October 1, 1987
Perchloroethylene (CAS 127-18-4) Listed: April 1, 1988

International Inventories

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

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

SECTION 16
Other Information

We believe all information given is accurate. It is offered in good faith but without guarantee. Since conditions of use are beyond our control, user assumes all responsibility and risk.

The supplier disclaims all expressed or implied warranties of merchantability or fitness for a specific use, with respect to the product or the information provided herein, except for conformation to contracted specifications. All information appearing herein is based upon data obtained from manufacturers and/or recognized technical sources. While the information is believed to be accurate, we make no representations as to its accuracy or sufficiency. Conditions of use are beyond our control, and therefore users are responsible for verifying the data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product. Users also assume all risks in regards to the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or process.

ABBREVIATIONS:

NG="NOT GIVEN"	BT="BETWEEN"
<="LESS THAN"	>="GREATER THAN"
ND = Not Determined	NA = Not Applicable

This information is intended to provide interpretative and authoritative information in regard to the subject matter covered as a service to our clients and has been answered to the best of our ability based on the information provided to us. We do not guarantee the accuracy or completeness of any such interpretation or information, however, nor do we warrant that compliance with any advice we provide will guarantee compliance with any legal or regulatory requirements. Our statements or opinions do not convey legal interpretation and government authorities or legal counsel should be contacted for such a response.