



TA-1 Test Kit Part A

TA-1

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SECTION 1. IDENTIFICATION

Product identifier used on the label

: **TA-1 Test Kit Part A**

Product Code(s) : P/N 780041; P/N 780042; P/N 780044

Recommended use of the chemical and restrictions on use

: Oil refrigeration test kit
Restriction on use: None known

Chemical family : Mixture.

Name, address, and telephone number of the supplier:

Parker Hannifin Corporation - Sporlan Division

206 Lange Drive
Washington, MO, U.S.A.
63090

Supplier's Telephone # : (636-239-1111

24 Hr. Emergency Tel # : Chemtrec 1-800-424-9300 (Within Continental U.S.); Chemtrec 703-527-3887 (Outside U.S.).

Name, address, and telephone number of the manufacturer:

Refer to supplier

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Clear, red liquid. Solvent odor.

This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification:

Flammable Liquids - Category 2

Eye Damage/Irritation - Category 2B

Skin Irritation - Category 2

Reproductive Toxicity - Category 1B

Specific Target Organ Toxicity, Single Exposure - Category 3 narcotic effects

Specific Target Organ Toxicity, Single Exposure -Category 3 (respiratory)

Specific Target Organ Toxicity, Repeated Exposure - Category 2

Aspiration Toxicity - Category 1

Label elements

Hazard pictogram(s)



Signal Word

DANGER!



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Hazard statement(s)

Highly flammable liquid and vapor.
Causes skin irritation.
Causes serious eye irritation.
Suspected of damaging fertility or the unborn child.
May cause respiratory irritation.
May cause drowsiness or dizziness.
May cause damage to organs through prolonged or repeated exposure.
May be fatal if swallowed and enters airways.

Precautionary statement(s)

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat, sparks and open flame. - No smoking.
Keep container tightly closed.
Ground/Bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wash thoroughly after handling.
Avoid breathing mist, vapors or spray.
Use only in well-ventilated areas.
Wear protective gloves/clothing and eye/face protection.

IF exposed or concerned: Get medical attention/advice.
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation occurs, get medical advice/attention.
Take off contaminated clothing and wash before re-use.
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 inhaled: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell.
If swallowed: Immediately call a poison center/doctor.
Do NOT induce vomiting.
In case of fire, use water fog, dry chemical, CO₂ or 'alcohol' foam.

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

Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards

Other hazards which do not result in classification:

Ingestion can cause gastrointestinal irritation, nausea, and diarrhea.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
Xylene	Dimethylbenzene Methyltoluene Xylol	1330-20-7	40.0 - 70.0
Ethyl alcohol	Ethanol	64-17-5	30.0 - 60.0



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Toluene	Methylbenzene Phenylmethane	108-88-3	1.0 - 5.0
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The exact concentrations of the above listed chemicals are being withheld as a trade secret.

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : Seek immediate medical attention/advice. Do not induce vomiting. Never give anything by mouth to an unconscious person.
- Inhalation* : Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Seek immediate medical attention/advice.
- Skin contact* : Remove/Take off immediately all contaminated clothing. Wash off immediately with plenty of water for at least 15 minutes. If irritation persists, seek prompt medical attention.
- Eye contact* : Immediately flush eyes with running water for at least 20 minutes. Seek immediate medical attention/advice.

Most important symptoms and effects, both acute and delayed

- : CNS depression may result from exposure. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. May cause skin irritation. Symptoms may include redness, itching and swelling. May cause severe eye irritation. Symptoms will include pain, redness and tearing. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause damage to the central nervous system through prolonged or repeated exposure if inhaled. Suspected of damaging the unborn child.

Indication of any immediate medical attention and special treatment needed

- : Treat symptomatically. Aspiration hazard This product is a CNS depressant.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

- : Dry chemical, foam, carbon dioxide and water fog. Do not use water jet, as this may spread burning material.

Unsuitable extinguishing media

- : Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture / Conditions of flammability

- : Highly flammable liquid and vapor. Vapour may cause flash fire! Vapours are heavier than air and may spread along floors. Vapours may ignite explosively.

Flammability classification (OSHA 29 CFR 1910.106)

- : Flammable Liquids - Category 2

Hazardous combustion products

- : Carbon oxides; Aldehydes; Hydrocarbons; irritating fumes and smoke.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

- : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Special fire-fighting procedures

- : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame.



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SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : All persons dealing with the clean-up should wear the appropriate chemically protective equipment. Keep all other personnel upwind and away from the spill/release. Restrict access to area until completion of clean-up. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. For large spills, dike the area to prevent spreading.

Methods and material for containment and cleaning up

- : Remove all sources of ignition. Ventilate area of release. Dike for water control. Stop spill or leak at source if safely possible. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13). Contact the proper local authorities.

Special spill response procedures

- : If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).
 US CERCLA Reportable quantity (RQ): Toluene (1000 lbs / 454 kg); Xylene (100 lbs / 45.4 kg)

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. Use in a well-ventilated area. Wear protective gloves/clothing and eye/face protection. Avoid breathing vapour or mist. Avoid contact with skin, eyes and clothing. Keep away from heat, sparks and open flames. Ground/Bond container and receiving equipment. Use only non-sparking tools. Keep away from acids and incompatibles. Take precautionary measures against static discharges. Always replace cap after use. Keep container tightly closed. Wash thoroughly after handling.

Conditions for safe storage : Store locked up. Store in a cool, dry, well-ventilated area. Keep container tightly closed. Store away from incompatibles and out of direct sunlight. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area.

Incompatible materials : Carbon oxides; Aldehydes; Hydrocarbons; irritating fumes and smoke . . .

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
	Xylene	100 ppm	150 ppm	100 ppm (435 mg/m ³)
Ethyl alcohol	N/Av	1000 ppm	1000 ppm ; 1900 mg/m ³	N/Av
Toluene	20 ppm	N/Av	200 ppm	300 ppm (Ceiling)

Exposure controls



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Ventilation and engineering measures

: Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

Respiratory protection

: If the TLV is exceeded, a NIOSH/MSHA-approved respirator is advised. Advice should be sought from respiratory protection specialists. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02.

Skin protection

: Impervious gloves must be worn when using this product. Advice should be sought from glove suppliers.

Eye / face protection

: Chemical splash goggles are recommended. A full face shield may also be necessary.

Other protective equipment

: Wear resistant clothing and boots. An eyewash station and safety shower should be made available in the immediate working area.

General hygiene considerations

: Handle in accordance with good industrial hygiene and safety practice. Avoid breathing vapour or mist. Avoid contact with skin, eyes and clothing. Wash contaminated clothing before reuse. Wash hands thoroughly after using this product, and before eating, drinking or smoking.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Clear, red liquid.

Odour : Solvent odor.

Odour threshold : N/Av

pH : N/Av

Melting/Freezing point : -30°C (-22°F)

Initial boiling point and boiling range

: 78°C (172°F)

Flash point : 4.4°C (40°F)

Flashpoint (Method) : Seta closed cup

Evaporation rate (BuAe = 1) : > 1

Flammability (solid, gas) : Not applicable.

Lower flammable limit (% by vol.)

: N/Av

Upper flammable limit (% by vol.)

: N/Av

Oxidizing properties : None known.

Explosive properties : Not explosive

Vapour pressure : 19 mm Hg

Vapour density : 1.6

Relative density / Specific gravity

: 0.86

Solubility in water : Partially soluble.

Other solubility(ies) : Not available.

Partition coefficient: n-octanol/water or Coefficient of water/oil distribution

: N/Av

Auto-ignition temperature : N/Av

Decomposition temperature : N/Av

Viscosity : < 2 cps

Volatiles (% by weight) : >99%

Volatile organic Compounds (VOC's)

: 860 g/L



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Absolute pressure of container

: N/Ap

Flame projection length

: N/Ap

Other physical/chemical comments

: No additional information.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability : Stable under the recommended storage and handling conditions prescribed.

Possibility of hazardous reactions

: No dangerous reaction known under conditions of normal use. Hazardous polymerization does not occur.

Conditions to avoid

: Avoid heat and open flame. Keep away from direct sunlight. Ensure adequate ventilation, especially in confined areas.

Incompatible materials

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

Hazardous decomposition products

: None known, refer to hazardous combustion products in Section 5.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES

Routes of entry skin & eye : YES

Routes of entry Ingestion : YES

Routes of exposure skin absorption

: NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

: CNS depression may result from exposure. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects.

Sign and symptoms ingestion

: May cause gastrointestinal irritation. May cause nausea, vomiting, headache and other central nervous system effects. Aspiration into the lungs during swallowing or subsequent vomiting may cause chemical pneumonitis, which can be fatal.

Sign and symptoms skin

: This material is classified as hazardous under OSHA regulations (29CFR 1910.1200) (Hazcom 2012). Classification:Skin Irritation - Category 2 Causes skin irritation.

Sign and symptoms eyes

: This material is classified as hazardous under OSHA regulations (29CFR 1910.1200) (Hazcom 2012).

Classification:Eye Damage/Irritation - Category 2B Causes serious eye irritation.

Potential Chronic Health Effects

: Prolonged or repeated contact may cause drying, cracking and defatting of the skin.

Mutagenicity

: Not expected to be mutagenic in humans.

Carcinogenicity

: No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP. Note that this product contains ethanol, a confirmed animal carcinogen (A3) by the ACGIH and human carcinogen (Group 1) by the IARC; however, this is only applicable when the chemical is present in alcoholic beverages.



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Reproductive effects & Teratogenicity

: This material is classified as hazardous under OSHA regulations (29CFR 1910.1200) (Hazcom 2012). Classification: Reproductive Toxicity - Category 1B
 Suspected of damaging fertility or the unborn child if inhaled.

Sensitization to material : Not expected to be a skin or respiratory sensitizer.

Specific target organ effects : This material is classified as hazardous under OSHA regulations (29CFR 1910.1200) (Hazcom 2012).
 Classification:
 Specific Target Organ Toxicity, Single Exposure - Category 3 narcotic effects
 Specific Target Organ Toxicity, Repeated Exposure - Category 2
 May cause drowsiness or dizziness.
 May cause damage to organs through prolonged or repeated exposure.

Medical conditions aggravated by overexposure

: Pre-existing skin, eye, respiratory and central nervous system disorders.

Synergistic materials : None known or reported by the manufacturer.

Toxicological data : See below for individual ingredient acute toxicity data.

<u>Chemical name</u>	<u>LC₅₀(4hr)</u> <u>inh, rat</u>	<u>LD₅₀</u>	
		<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Xylene	6350 ppm (27.6 mg/L) (vapours)	3253 mg/kg	12 180 mg/kg
Ethyl alcohol	> 32 380 ppm	7060 mg/kg	> 15 800 mg/kg
Toluene	7585 ppm (28.1 mg/L) (vapour)	5580 mg/kg	12 125 mg/kg

Other important toxicological hazards

: None known.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : Harmful to aquatic life with long lasting effects. Do not allow material to contaminate ground water system. See the following tables for individual ingredient ecotoxicity data.

Ecotoxicity data:

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Fish</u>		
		<u>LC50 / 96h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Xylene	1330-20-7	8.2 mg/L (Rainbow trout)	N/Av	None.
Ethyl alcohol	64-17-5	> 100 mg/L (Fathead minnow)	N/Av	None.
Toluene	108-88-3	5.4 mg/L (pink salmon)	1.4 - 4.0 mg/L	None.



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<u>Ingredients</u>	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Xylene	1330-20-7	3.2 - 9.56 mg/L (Daphnia magna)	N/Av	None.
Ethyl alcohol	64-17-5	5012 mg/L Water flea	N/Av	None.
Toluene	108-88-3	3.78 mg/L Ceriodaphnia (water flea)	0.53 - 1 mg/L	None.

<u>Ingredients</u>	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Xylene	1330-20-7	3.2 - 4.9 mg/L/72hr (Green algae)	N/Av	None.
Ethyl alcohol	64-17-5	1000 mg/L/96hr (Green algae)	N/Av	None.
Toluene	108-88-3	N/Av	10 mg/L/72hr (Green algae)	None.

Persistence and degradability

- : No data is available on the product itself. This product contains: Toluene; Ethanol. Toluene is considered to be readily biodegradable. Ethanol is considered to be readily biodegradable.

Bioaccumulation potential

- : No data is available on the product itself. This product contains: Toluene. The log Kow value for Toluene is 2.65, and its Bioconcentration Factor (BCF) is 90 (OECD).

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
Xylene (CAS 1330-20-7)	3.12 - 3.2	0.6 - 15
Ethyl alcohol (CAS 64-17-5)	-0.32	N/Av
Toluene (CAS 108-88-3)	2.65	90

Mobility in soil

- : No data is available on the product itself.

Other Adverse Environmental effects

- : No data is available on the product itself.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal

- : Handle waste according to recommendations in Section 7. Empty containers retain residue (liquid and/or vapour) and can be dangerous.

Methods of Disposal

- : Dispose in accordance with all applicable federal, state, provincial and local regulations.

RCRA

- : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.



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SECTION 14. TRANSPORT INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	UN1993	Flammable Liquids, n.o.s. (Xylene, Ethanol)	3	II	
49CFR/DOT Additional information	May be shipped as a Limited Quantity according to packaging section 173.150. Refer to 49 CFR Section 173.150.				
TDG	UN1993	FLAMMABLE LIQUID, N.O.S. (Xylene;Ethanol)	3	II	
TDG Additional information	Within Canada, the Limited Quantity Exemption may apply for containers which hold specific quantities of the product. Under the TDGR, refer to section 1.17 for Limited Quantity Exemption information, if shipping under this exemption.				
ICAO/IATA	UN1993	Flammable liquid, n.o.s. (Xylene; Ethanol)	3	II	
ICAO/IATA Additional information	Refer to ICAO/IATA Packing Instruction				

Special precautions for user : Appropriate advice on safety must accompany the package. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking.

Environmental hazards : This product does not meet the criteria for an environmentally hazardous mixture, according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
 : Not applicable.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Xylene	1330-20-7	Yes	100 lb/ 45.4 kg	None.	Yes	1%
Ethyl alcohol	64-17-5	Yes	N/Ap	None.	No	NS
Toluene	108-88-3	Yes	1000 lb/ 454 kg	None.	Yes	1%

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Physical hazards (Flammable) Health hazards(Eye irritation ;Skin irritation ;Reproductive toxicity ;Aspiration hazard;Specific target organ toxicity, single exposure ;Specific target organ toxicity, repeated exposure).Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.



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US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Xylene	1330-20-7	No	N/Ap	Yes	Yes	Yes	Yes	Yes	Yes
Ethyl alcohol	64-17-5	Yes	carcinogen (in alcoholic beverages); developmental toxicity (in alcoholic beverages); Carcinogen	Yes	Yes	Yes	Yes	Yes	Yes
Toluene	108-88-3	Yes	Developmental	Yes	Yes	Yes	Yes	Yes	Yes

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	CAS #	European EINECS	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
Xylene	1330-20-7	215-535-7	Present	Present	(3)-60; (3)-3	KE-35427	Present	HSR000983
Ethyl alcohol	64-17-5	200-578-6	Present	Present	(2)-202	KE-13217	Present	HSR001144
Toluene	108-88-3	203-625-9	Present	Present	(3)-2	KE-33936	Present	HSR001227

SECTION 16. OTHER INFORMATION

Legend

- : ACGIH: American Conference of Governmental Industrial Hygienists
- CA: California
- CAS: Chemical Abstract Services
- CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
- CFR: Code of Federal Regulations
- CNS: Central Nervous System
- DOT: Department of Transportation
- HMIS: Hazardous Materials Identification System
- HSDB: Hazardous Substances Data Bank
- IARC: International Agency for Research on Cancer
- Inh: Inhalation
- LC: Lethal Concentration
- LD: Lethal Dose
- MA: Massachusetts
- MN: Minnesota
- MSHA: Mine Safety and Health Administration



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N/Ap: Not Applicable
 N/Av: Not Available
 NFPA: National Fire Protection Association
 NJ: New Jersey
 NIOSH: National Institute of Occupational Safety and Health
 NTP: National Toxicology Program
 OSHA: Occupational Safety and Health Administration
 PA: Pennsylvania
 PEL: Permissible exposure limit
 RCRA: Resource Conservation and Recovery Act
 RI: Rhode Island
 RTECS: Registry of Toxic Effects of Chemical Substances
 SARA: Superfund Amendments and Reauthorization Act
 STEL: Short Term Exposure Limit
 TDG: Canadian Transportation of Dangerous Goods Act & Regulations
 TLV: Threshold Limit Values
 TWA: Time Weighted Average
 WHMIS: Workplace Hazardous Materials Identification System

- References** :
1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2016
 2. International Agency for Research on Cancer Monographs, searched 2017
 3. Canadian Centre for Occupational Health and Safety, CChemoWeb databases, 2017(Chempendium, HSDB and RTECs).
 4. Material Safety Data Sheets from manufacturer.
 5. US EPA Title III List of Lists - 2017 version.
 6. California Proposition 65 List - 2017 version.
 7. OECD - The Global Portal to Information on Chemical Substances - eChemPortal,2017.

Preparation Date (mm/dd/yyyy) : 05/11/2015

Reviewed Date SDS (dd/mm/yyyy) : 08/02/2019

Revision No. : 2
Revision Information : All (format change)

Other special considerations for handling

HMIS Rating : * - Chronic hazard 0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe
*Health: *2 Flammability: 3 Reactivity: 0*

NFPA Rating : 0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe
Health: 2 Flammability: 3 Instability: 0 Special Hazards: None.

<p><u>Prepared for:</u> Parker Hannifin Corporation - Sporlan Division 206 Lange Drive, Washington, MO, U.S.A. 63090 Telephone: (636) 239-1111 www.parker.com Direct all enquiries to: Parker Hannifin Corporation - Sporlan Division.</p>	
<p><u>Prepared by:</u> ICC The Compliance Center Inc. Telephone: (888) 442-9628 (U.S.); (888) 977-4834 (Canada) http://www.thecompliancecenter.com</p>	



Parker Hannifin Corporation - Sporlan Division
206 Lange Drive
Washington, MO, U.S.A., 63090
Telephone: (636) 239 1111

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DISCLAIMER

This Material Safety Data Sheet was prepared by ICC The Compliance Center Inc. using information provided by / obtained from Parker Hannifin Corp and CCOHS' Web Information Service. The information in the Material Safety Data Sheet is offered for your consideration and guidance when exposed to this product. ICC The Compliance Center Inc and Parker Hannifin Corp expressly disclaim all expressed or implied warranties and assume no responsibilities for the accuracy or completeness of the data contained herein. The data in this MSDS does not apply to use with any other product or in any other process.

This Material Safety Data Sheet may not be changed, or altered in any way without the expressed knowledge and permission of ICC The Compliance Center Inc. and Parker Hannifin Corp.

END OF DOCUMENT



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SECTION 1. IDENTIFICATION

Product identifier used on the label

: **TA-Acid Test Kit Part B**

Product Code(s) : P/N 780041; P/N 780042; P/N 780044

Recommended use of the chemical and restrictions on use

: Oil refrigeration test kit
Restriction on use: None known

Chemical family : Mixture.

Name, address, and telephone number
of the supplier:

Parker Hannifin Corporation - Sporlan Division

206 Lange Drive
Washington, MO, U.S.A.
63090

Supplier's Telephone # : (636-239-1111

24 Hr. Emergency Tel # : Chemtrec 1-800-424-9300 (Within Continental U.S.); Chemtrec 703-527-3887
(Outside U.S.).

Name, address, and telephone number of
the manufacturer:

Refer to supplier

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Clear, red liquid. Solvent odor.

This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification :

Flammable Liquids - Category 2

Eye Damage/Irritation - Category 2A

Skin Irritation - Category 2

Reproductive Toxicity - Category 1B

Specific Target Organ Toxicity, Single Exposure - Category 3 narcotic effects

Specific Target Organ Toxicity, Repeated Exposure - Category 2

Aspiration Toxicity - Category 1

Label elements

Hazard pictogram(s)



Signal Word

DANGER!

Hazard statement(s)

Highly flammable liquid and vapor.

Causes skin irritation.

Causes serious eye irritation.

Suspected of damaging fertility or the unborn child.

May cause drowsiness or dizziness.

May cause damage to organs through prolonged or repeated exposure.

May be fatal if swallowed and enters airways.



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Precautionary statement(s)

Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Keep away from heat, sparks and open flame. - No smoking.
 Keep container tightly closed.
 Ground/Bond container and receiving equipment.
 Use explosion-proof electrical/ventilating/lighting/equipment.
 Use only non-sparking tools.
 Take precautionary measures against static discharge.
 Wash thoroughly after handling.
 Avoid breathing mist, vapors or spray.
 Use only in well-ventilated areas.
 Wear protective gloves/clothing and eye/face protection.

IF exposed or concerned: Get medical attention/advice.
 IF ON SKIN: Wash with plenty of soap and water.
 If skin irritation occurs, get medical advice/attention.
 Take off contaminated clothing and wash before re-use.
 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 inhaled: Remove person to fresh air and keep comfortable for breathing.
 Call a POISON CENTER or doctor/physician if you feel unwell.
 If swallowed: Immediately call a poison center/doctor.
 Do NOT induce vomiting.
 In case of fire, use water fog, dry chemical, CO2 or 'alcohol' foam.

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

Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards

Other hazards which do not result in classification:

Ingestion can cause gastrointestinal irritation, nausea, and diarrhea.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
Ethyl alcohol	Ethanol	64-17-5	80.0 - 100.0
Toluene	Methylbenzene Phenylmethane	108-88-3	1.0 - 5.0
sodium hydroxide	Caustic soda Sodium hydrate soda lye	1310-73-2	0.1 - 1.0
Potassium hydroxide	Caustic potash Potassium hydrate	1310-58-3	0.1 - 1.0

The exact concentrations of the above listed chemicals are being withheld as a trade secret.

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

Ingestion : Seek immediate medical attention/advice. Do not induce vomiting. Never give anything by mouth to an unconscious person.



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- Inhalation* : Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Seek immediate medical attention/advice.
- Skin contact* : Remove/Take off immediately all contaminated clothing. Wash off immediately with plenty of water for at least 15 minutes. If irritation persists, seek prompt medical attention.
- Eye contact* : Immediately flush eyes with running water for at least 20 minutes. Seek immediate medical attention/advice.

Most important symptoms and effects, both acute and delayed

- : CNS depression may result from exposure. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. May cause skin irritation. Symptoms may include redness, itching and swelling. May cause severe eye irritation. Symptoms will include pain, redness and tearing. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause damage to the central nervous system through prolonged or repeated exposure if inhaled. Suspected of damaging the unborn child.

Indication of any immediate medical attention and special treatment needed

- : Treat symptomatically. Aspiration hazard This product is a CNS depressant.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

- : Dry chemical, foam, carbon dioxide and water fog. Do not use water jet, as this may spread burning material.

Unsuitable extinguishing media

- : Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture / Conditions of flammability

- : Highly flammable liquid and vapor. Vapour may cause flash fire! Vapours are heavier than air and may spread along floors. Vapours may ignite explosively.

Flammability classification (OSHA 29 CFR 1910.106)

- : Flammable Liquids - Category 2

Hazardous combustion products

- : Carbon oxides; Aldehydes; Hydrocarbons; irritating fumes and smoke.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

- : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Special fire-fighting procedures

- : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : All persons dealing with the clean-up should wear the appropriate chemically protective equipment. Keep all other personnel upwind and away from the spill/release. Restrict access to area until completion of clean-up. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. For large spills, dike the area to prevent spreading.

Methods and material for containment and cleaning up



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- : Remove all sources of ignition. Ventilate area of release. Dike for water control. Stop spill or leak at source if safely possible. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13). Contact the proper local authorities.

Special spill response procedures

- : If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).
 US CERCLA Reportable quantity (RQ): Toluene (1000 lbs / 454 kg)

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. Use in a well-ventilated area. Wear protective gloves/clothing and eye/face protection. Avoid breathing vapour or mist. Avoid contact with skin, eyes and clothing. Keep away from heat, sparks and open flames. Ground/Bond container and receiving equipment. Use only non-sparking tools. Keep away from acids and incompatibles. Take precautionary measures against static discharges. Always replace cap after use. Keep container tightly closed. Wash thoroughly after handling.

Conditions for safe storage

- : Store locked up. Store in a cool, dry, well-ventilated area. Keep container tightly closed. Store away from incompatibles and out of direct sunlight. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area.

Incompatible materials

- : Carbon oxides;Aldehydes;Hydrocarbons;irritating fumes and smoke .

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<u>Exposure Limits:</u>				
<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Ethyl alcohol	N/Av	1000 ppm	1000 ppm ; 1900 mg/m ³	N/Av
Toluene	20 ppm	N/Av	200 ppm	300 ppm (Ceiling)
sodium hydroxide	2 mg/m ³ (Ceiling)	N/Av	2 mg/m ³	N/Av
Potassium hydroxide	N/Av	N/Av	N/Av	N/Av

Exposure controls

Ventilation and engineering measures

- : Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

Respiratory protection

- : If the TLV is exceeded, a NIOSH/MSHA-approved respirator is advised. Advice should be sought from respiratory protection specialists. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02.

Skin protection

- : Impervious gloves must be worn when using this product. Advice should be sought from glove suppliers.

Eye / face protection

- : Chemical splash goggles are recommended. A full face shield may also be necessary.

Other protective equipment

- : Wear resistant clothing and boots. An eyewash station and safety shower should be made available in the immediate working area.



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General hygiene considerations

- : Handle in accordance with good industrial hygiene and safety practice. Avoid breathing vapour or mist. Avoid contact with skin, eyes and clothing. Wash contaminated clothing before reuse. Wash hands thoroughly after using this product, and before eating, drinking or smoking.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Clear, red liquid.

Odour : Solvent odor.

Odour threshold : N/Av

pH : N/Av

Melting/Freezing point : -30°C (-22°F)

Initial boiling point and boiling range

: 78°C (172°F)

Flash point : 4.4°C (40°F)

Flashpoint (Method) : Seta closed cup

Evaporation rate (BuAe = 1) : > 1

Flammability (solid, gas) : Not applicable.

Lower flammable limit (% by vol.)

: N/Av

Upper flammable limit (% by vol.)

: N/Av

Oxidizing properties : None known.

Explosive properties : Not explosive

Vapour pressure : 19 mm Hg

Vapour density : 1.6

Relative density / Specific gravity

: 0.86

Solubility in water : Partially soluble.

Other solubility(ies) : Not available.

Partition coefficient: n-octanol/water or Coefficient of water/oil distribution

: N/Av

Auto-ignition temperature : N/Av

Decomposition temperature : N/Av

Viscosity : < 2 cps

Volatiles (% by weight) : >99%

Volatile organic Compounds (VOC's)

: 860 g/L

Absolute pressure of container

: N/Av

Flame projection length : N/Av

Other physical/chemical comments

: None.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability : Stable under the recommended storage and handling conditions prescribed.



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Possibility of hazardous reactions

- : No dangerous reaction known under conditions of normal use. Hazardous polymerization does not occur.

Conditions to avoid

- : Avoid heat and open flame. Keep away from direct sunlight. Ensure adequate ventilation, especially in confined areas.

Incompatible materials

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

Hazardous decomposition products

- : None known, refer to hazardous combustion products in Section 5.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES

Routes of entry skin & eye : YES

Routes of entry Ingestion : YES

Routes of exposure skin absorption

- : NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

- : CNS depression may result from exposure. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects.

Sign and symptoms ingestion

- : May cause gastrointestinal irritation. May cause nausea, vomiting, headache and other central nervous system effects. Aspiration into the lungs during swallowing or subsequent vomiting may cause chemical pneumonitis, which can be fatal.

Sign and symptoms skin

- : This material is classified as hazardous under OSHA regulations (29CFR 1910.1200) (Hazcom 2012). Classification: Skin Irritation - Category 2 Causes skin irritation.

Sign and symptoms eyes

- : This material is classified as hazardous under OSHA regulations (29CFR 1910.1200) (Hazcom 2012).

Classification: Eye Damage/Irritation - Category 2B Causes serious eye irritation.

Potential Chronic Health Effects

- : Prolonged or repeated contact may cause drying, cracking and defatting of the skin.

Mutagenicity

- : Not expected to be mutagenic in humans.

Carcinogenicity

- : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP. Note that this product contains ethanol, a confirmed animal carcinogen (A3) by the ACGIH and human carcinogen (Group 1) by the IARC; however, this is only applicable when the chemical is present in alcoholic beverages.

Reproductive effects & Teratogenicity

- : This material is classified as hazardous under OSHA regulations (29CFR 1910.1200) (Hazcom 2012). Classification: Reproductive Toxicity - Category 1B Suspected of damaging fertility or the unborn child if inhaled.

Sensitization to material

- : Not expected to be a skin or respiratory sensitizer.

Specific target organ effects

- : This material is classified as hazardous under OSHA regulations (29CFR 1910.1200) (Hazcom 2012).

Classification:

Specific Target Organ Toxicity, Single Exposure - Category 3 narcotic effects

Specific Target Organ Toxicity, Repeated Exposure - Category 2

May cause drowsiness or dizziness.

May cause damage to organs through prolonged or repeated exposure.



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Medical conditions aggravated by overexposure

: Pre-existing skin, eye, respiratory and central nervous system disorders.

Synergistic materials

: None known or reported by the manufacturer.

Toxicological data

: See below for individual ingredient acute toxicity data.

<u>Chemical name</u>	<u>LC₅₀(4hr)</u> <u>inh, rat</u>	<u>LD₅₀</u>	
		<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Ethyl alcohol	> 32 380 ppm	7060 mg/kg	> 15 800 mg/kg
Toluene	7585 ppm (28.1 mg/L) (vapour)	5580 mg/kg	12 125 mg/kg
sodium hydroxide	N/Av	N/Av	N/Av
Potassium hydroxide	N/Av	250 mg/kg	> 1260 mg/kg

Other important toxicological hazards

: None known.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

: Harmful to aquatic life with long lasting effects. Do not allow material to contaminate ground water system. See the following tables for individual ingredient ecotoxicity data.

Ecotoxicity data:

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Fish</u>		
		<u>LC50 / 96h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Ethyl alcohol	64-17-5	> 100 mg/L (Fathead minnow)	N/Av	None.
Toluene	108-88-3	5.4 mg/L (pink salmon)	1.4 - 4.0 mg/L	None.
sodium hydroxide	1310-73-2	125 mg/L (Mosquito fish)	N/Av	None.
Potassium hydroxide	1310-58-3	80 mg/L (Mosquito fish)	N/Av	None.

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Daphnia</u>		
		<u>EC50 / 48h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Ethyl alcohol	64-17-5	5012 mg/L Water flea	N/Av	None.
Toluene	108-88-3	3.78 mg/L Ceriodaphnia (water flea)	0.53 - 1 mg/L	None.
sodium hydroxide	1310-73-2	40 mg/L (Water flea)	N/Av	None.
Potassium hydroxide	1310-58-3	56 mg/L Ceriodaphnia (water flea)	N/Av	None.



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<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Algae</u>		
		<u>EC50 / 96h or 72h</u>	<u>NOEC / 96h or 72h</u>	<u>M Factor</u>
Ethyl alcohol	64-17-5	1000 mg/L/96hr (Green algae)	N/Av	None.
Toluene	108-88-3	N/Av	10 mg/L/72hr (Green algae)	None.
sodium hydroxide	1310-73-2	N/Av	N/Av	None.
Potassium hydroxide	1310-58-3	N/Av	N/Av	None.

Persistence and degradability

- : No data is available on the product itself. This product contains: Toluene; Ethanol. Toluene is considered to be readily biodegradable. Ethanol is considered to be readily biodegradable.

Bioaccumulation potential

- : No data is available on the product itself. This product contains: Toluene. The log Kow value for Toluene is 2.65, and its Bioconcentration Factor (BCF) is 90 (OECD).

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
Ethyl alcohol (CAS 64-17-5)	-0.32	
Toluene (CAS 108-88-3)	2.65	
sodium hydroxide (CAS 1310-73-2)	N/Ap	N/Ap
Potassium hydroxide (CAS 1310-58-3)	N/Ap	N/Ap

Mobility in soil

- : No data is available on the product itself.

Other Adverse Environmental effects

- : No data is available on the product itself.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal

- : Handle waste according to recommendations in Section 7. Empty containers retain residue (liquid and/or vapour) and can be dangerous.

Methods of Disposal

- : Dispose in accordance with all applicable federal, state, provincial and local regulations.

RCRA

- : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.



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SECTION 14. TRANSPORT INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	UN1993	Flammable Liquids, n.o.s. (Toluene; Ethanol)	3	II	
49CFR/DOT Additional information	May be shipped as a Limited Quantity according to packaging section 173.150.				
TDG	UN1993	FLAMMABLE LIQUID, N.O.S. (Toluene; Ethanol)	3	II	
TDG Additional information	Within Canada, the Limited Quantity Exemption may apply for containers which hold specific quantities of the product. Under the TDGR, refer to section 1.17 for Limited Quantity Exemption information, if shipping under this exemption.				
ICAO/IATA	UN1993	Flammable liquid, n.o.s. (Toluene; Ethanol)	3	II	
ICAO/IATA Additional information	Product may be reclassified for air transportation if packaged in accordance with IATA regulations (i.e. ID 8000, Consumer Commodity, Class 9).				

Special precautions for user : Appropriate advice on safety must accompany the package. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking.

Environmental hazards : See ECOLOGICAL INFORMATION, Section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

: Not applicable.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Ethyl alcohol	64-17-5	Yes	N/Ap	None.	No	N/Ap
Toluene	108-88-3	Yes	1000 lb/ 454 kg	None.	Yes	1%
sodium hydroxide	1310-73-2	Yes	1000 lb/ 454 kg	None.	No	N/Ap
Potassium hydroxide	1310-58-3	Yes	1000 lb/ 454 kg	None.	No	N/Ap

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Physical hazards (Flammable)Health hazards (Skin irritation ;Eye irritation ;Aspiration hazard; Specific target organ toxicity, repeated exposure;Specific target organ toxicity, single exposure ;Reproductive toxicity).Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.



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US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Ethyl alcohol	64-17-5	Yes	carcinogen (in alcoholic beverages); developmental toxicity (in alcoholic beverages); Carcinogen	Yes	Yes	Yes	Yes	Yes	Yes
Toluene	108-88-3	Yes	Developmental	Yes	Yes	Yes	Yes	Yes	Yes
sodium hydroxide	1310-73-2	No	N/Ap	Yes	Yes	Yes	Yes	Yes	Yes
Potassium hydroxide	1310-58-3	No	N/Ap	Yes	Yes	Yes	Yes	Yes	Yes

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	CAS #	European EINECS	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
Ethyl alcohol	64-17-5	200-578-6	Present	Present	(2)-202	KE-13217	Present	HSR001144
Toluene	108-88-3	203-625-9	Present	Present	(3)-2	KE-33936	Present	HSR001227
sodium hydroxide	1310-73-2	215-185-5	Present	Present	(2)-1972; (1)-410	KE-31487	Present	HSR001547
Potassium hydroxide	1310-58-3	215-181-3	Present	Present	(1)-369	KE-29139	Present	HSR001546

SECTION 16. OTHER INFORMATION

Legend

: ACGIH: American Conference of Governmental Industrial Hygienists
 CA: California
 CAS: Chemical Abstract Services
 CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
 CFR: Code of Federal Regulations
 CNS: Central Nervous System
 DOT: Department of Transportation
 HMIS: Hazardous Materials Identification System
 HSDB: Hazardous Substances Data Bank
 IARC: International Agency for Research on Cancer
 Inh: Inhalation
 LC: Lethal Concentration
 LD: Lethal Dose



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MA: Massachusetts
 MN: Minnesota
 MSHA: Mine Safety and Health Administration
 N/Ap: Not Applicable
 N/Av: Not Available
 NFPA: National Fire Protection Association
 NJ: New Jersey
 NIOSH: National Institute of Occupational Safety and Health
 NTP: National Toxicology Program
 OSHA: Occupational Safety and Health Administration
 PA: Pennsylvania
 PEL: Permissible exposure limit
 RCRA: Resource Conservation and Recovery Act
 RI: Rhode Island
 RTECS: Registry of Toxic Effects of Chemical Substances
 SARA: Superfund Amendments and Reauthorization Act
 STEL: Short Term Exposure Limit
 TDG: Canadian Transportation of Dangerous Goods Act & Regulations
 TLV: Threshold Limit Values
 TWA: Time Weighted Average
 WHMIS: Workplace Hazardous Materials Identification System

References

- 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2016
- 2. International Agency for Research on Cancer Monographs, searched 2017
- 3. Canadian Centre for Occupational Health and Safety, CCHInfoWeb databases, 2017(Chempendium, HSDB and RTECs).
- 4. Material Safety Data Sheets from manufacturer.
- 5. US EPA Title III List of Lists - 2017 version.
- 6. California Proposition 65 List - 2017 version.
- 7. OECD - The Global Portal to Information on Chemical Substances - eChemPortal,2017.

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: 05/11/2015

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: 08/02/2019

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: 2

Revision Information

: All (format change)

Other special considerations for handling

:

HMIS Rating

: * - Chronic hazard 0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe
 Health: *2 Flammability: 3 Reactivity: 0

NFPA Rating

0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe
 : Health: 2 Flammability: 3 Instability: 0 Special Hazards: None.



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<p>Prepared for: Parker Hannifin Corporation - Sporlan Division 206 Lange Drive, Washington, MO, U.S.A. 63090 Telephone: (636) 239-1111 www.parker.com Direct all enquiries to: Parker Hannifin Corporation - Sporlan Division.</p>	
<p>Prepared by: ICC The Compliance Center Inc. Telephone: (888) 442-9628 (U.S.); (888) 977-4834 (Canada) http://www.thecompliancecenter.com</p>	

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