MATERIAL SAFETY DATA SHEET
AND SAFE HANDLING AND DISPOSAL INFORMATION

CLEAN ACROSS AMERICA AND THROUGHOUT THE WORLD™

ZEP MANUFACTURING COMPANY
P.O. BOX 2015
ATLANTA, GEORGIA 30301

FROST BENCO ELECTRIC
HWY 169 SOUTH
MANKATO, MN 56001

09/17/92
ISSUE DATE: 09/12/90
SUPERSEDES: 03/03/90

ZEP BRAKE PARTS CLEANER
PRODUCT NO.: 0290 **Aerosol Brake Parts Cleaner**

SECTION I - EMERGENCY CONTACTS

TELEPHONE:
(404) 352-1680 *BETWEEN 8:00 AM - 5:00 PM (EST)*

MEDICAL EMERGENCY:
(404) 435-2973 *NON-OFFICE HOURS, WEEKENDS*
(404) 351-2952 *AND HOLIDAYS, PLEASE CALL YOUR*
(404) 432-2873 **LOCAL POISON CONTROL**

TRANSPORTATION EMERGENCY:
(404) 922-0923

CHEMTREC:
1-800-424-9300 **TOLL-FREE - ALL CALLS RECORDED**

DISTRICT OF COLUMBIA:
(202) 483-7616 **ALL CALLS RECORDED**

SECTION II - HAZARDOUS INGREDIENTS

DESIGNATIONS	TLV (PPM)	EFFECTS (SEE REVERSE)	% IN PROD.
@ ** 1,1,1-TRICHLOROETHANE ** methyl chloroform chlorothene; CAS# 71-55-6; RTECS# KJ2975000; OSHA PEL-350 PPM; ACGIH/OSHA STEL-450 PPM	350	IRR CNS	60-70
@ ** TETRACHLOROETHYLENE ** perchloroethylene; perc; carbon bichloride; CAS# 127-18-4; RTECS# KX3850000 OSHA PEL-25 PPM; ACGIH STEL-200 PPM	50	CNS IRR CAR	30-40

@ Identifies chemicals listed under SARA-Section 313 for release reporting

SECTION III - HEALTH HAZARD DATA

Special Note: MSDS data pertains to the product as dispensed from the container. Adverse health effects would not be expected under recommended conditions of use (diluted) so long as prescribed safety precautions are practiced.

Acute Effects of Overexposure:
Inhalation of vapor can produce central nervous system depression, characterized by dizziness, headache, nausea, cardiac and/or respiratory depression, stupor, unconsciousness and death, in extreme cases. Exposure to high concentrations of vapor by direct contact or inhalation can be irritating to mucous membranes, such as eyes and upper respiratory tract. Severe eye exposure to liquid can cause reversible eye damage. Skin contact may cause a burning sensation and reddening of the skin. Introduction of solvent to the lungs, as in aspiration of vomitus fluids, may cause chemical pneumonia. Exposure to this product may aggravate existing respiratory and cardiac conditions. Inhalation of aerosol mist may produce chemical pneumonia.

Chronic Effects of Overexposure:
Repeated or prolonged contact by inhalation or skin absorption may produce liver or kidney damage or damage to the central nervous system, characterized by tingling or numbness in the extremities, blurred vision or confusion. Skin, which is defatted by repeated exposure to solvents, is more susceptible to irritation, infection, and dermatitis. Exposure to some ingredients in this product can aggravate existing liver disease or heart rhythm disorders. One of the ingredients in this product has been shown to cause tumors in laboratory test animals. The relevance of these studies for humans has not been established.

Est'd PEL/TLV: 201 PPM **Primary Routes of Entry:** Inh, Skin.

HMIS Codes: HEALTH 1;FLAM. 1;REACT. 1;PERS. PROTECT. B ;CHRONIC HAZ. YES

FIRST AID PROCEDURES:
Skin: Wash contaminated skin thoroughly with soap or a mild detergent. Apply a skin cream with lanolin. Get medical attention if irritation persists.
Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting upper and lower lids. Get medical attention at once.
Inhale: Move exposed person to fresh air at once. If breathing has stopped, perform artificial respiration. Get medical attention immediately.
Ingest: If swallowed, do not induce vomiting. If vomiting occurs, keep head below hip level. Get emergency medical attention immediately.

SECTION IV - SPECIAL PROTECTION INFORMATION

Protective Clothing: Wear viton gloves or use gloves with demonstrated resistance to the ingredients in this product.
Eye Protection: Use tight-fitting safety glasses. Contact lenses should not be worn when working with this material.
Respiratory Protection: If ventilation is inadequate, wear a properly fitting MSHA or OSHA-approved respirator.
Ventilation: Ventilation should be equivalent to outdoors. Use exhaust fans and open windows in enclosed spaces.

SECTION V - PHYSICAL DATA

Boiling Point (°F):	165-250F	**Specific Gravity:**	1.42	**Vapor Pressure (mmHg):**	APPROX. 100
Percent Volatile by Volume (%):	100	**Vapor Density (air = 1):**	4.95	**Evaporation Rate (CCL4 = 1):**	.34
Solubility in Water:	NEGLIGIBLE	**pH (concentrate):**	N/A	**pH (use dilution of):**	N/A

Appearance and Odor: A THIN, COLORLESS LIQUID WITH A CHLORINATED HYDROCARBON ODOR

SECTION VI - FIRE AND EXPLOSION DATA

Flash Point (°F) (method used): NOT FLAMMABLE (CSMA)
Flammable Limits: LEL 7.0 UEL 15.0
Extinguishing Media: N/A
Special Fire Fighting: Wear self-contained positive pres. Breathing apparatus.
Unusual Fire Hazards: Direct water onto intact containers to prevent bursting.

SECTION VII - REACTIVITY DATA

Stability: Stable
Incompatibility (avoid): Strong acids & alkalis, oxidizers and active metals.
Polymerization: Will not occur.
Hazardous Decomposition: Carbon dioxide,carbon monoxide, hydrogen chloride, and small amounts of phosgene & chlorine gas.

SECTION VIII - SPILL AND DISPOSAL PROCEDURES

Steps to be Taken in Case Material is Released or Spilled:
Observe safety precautions in sections 4 & 9 during spill clean-up. Large spills are unlikely due to packaging. Spill may be absorbed on an inert absorbent (eg Zep-O-Zorb), placed in a suitable container for disposal. Wash area thoroughly with a detergent solution and rinse well with water.

Waste Disposal Method:
Product is consumed in use. Do not crush, puncture or incinerate spent containers. Large numbers of aerosol containers may require handling as a hazardous waste, but in most states total hazardous waste quantities less than 220 lbs per month may allow disposal in a chemical or industrial waste landfill. Consult local, state and federal agencies for the proper disposal method in your area.

RCRA Hazardous Waste Numbers: F002, D039

SECTION IX - SPECIAL PRECAUTIONS

Precautions to be Taken When Handling and Storing:
Do not store at temperatures above 120F. Or in direct sunlight. Do not puncture or incinerate container. Store away from strong acids and oxidizing compounds. Keep product away from skin and eyes. Do not breathe spray mists or vapors. Clothing or shoes which become contaminated with substance should be removed promptly and not reborn until thoroughly cleaned. Vapors are heavier than air and will accumulate at low points. Ventilation should include floor level exhausting. Keep out of the reach of children.

SECTION X - TRANSPORTATION DATA

DOT Proper Shipping Name: CONSUMER COMMODITY
DOT Hazard Class: ORM-D
DOT I.D. Number: N/A
DOT Label/Placard: ORM-D
EPA TSCA Chemical Inventory: ALL INGREDIENTS ARE LISTED
EPA CWA 40CFR Part 117 substance (RQ in a single container): : NONE

NOTICE

Thank you for your interest in, and use of, Zep products. Zep Manufacturing Co. is pleased to be of service to you by supplying this Material Safety Data Sheet for your files. Zep Manufacturing is concerned for your health and safety. Zep products can be used safely with proper protective equipment and proper handling practices consistent with label instructions and the MSDS. Before using any Zep product, be sure to read the complete label and the Material Safety Data Sheet.

As a further word of caution, Zep wishes to advise that serious accidents have resulted from the misuse of "emptied" containers. "Empty" containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, flame, or other sources of ignition; they may explode or develop harmful vapors and possibly cause injury or death. Clean empty containers by triple rinsing with water or an appropriate solvent. Empty containers must be sent to a drum reconditioner before reuse.

TERMS AND ABBREVIATIONS USED IN THE MSDS:
BY SECTION ALPHABETICALLY:

SECTION II: HAZARDOUS INGREDIENTS

CAR; Carcinogen - A chemical listed by the National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC) or OSHA as a definite or possible human cancer causing agent.
CAS #; Chemical Abstract Services Registry Number - A universally accepted numbering system for chemical substances.
CBL; Combustible - At temperatures between 100°F and 200°F chemical gives off enough vapor to ignite if a source of ignition is present as tested with a closed cup tester.
CNS; Central Nervous System depressant reduces the activity of the brain and spinal cord.
COR; Corrosive - Causes irreversible alterations in living tissue (e.g. burns).
DESIGNATIONS; Chemical and common names of hazardous ingredients.
EIR; Eye Irritant Only - Causes reversible reddening and/or inflammation of eye tissues.
EXPOSURE LIMITS; The time weighted average (TWA) airborne concentration at which most workers can be exposed without any expected adverse effects. Primary sources include ACGIH TLV's, and OSHA PEL's (TWA, STEL and ceiling limits).
ACGIH; American Conference of Governmental Industrial Hygienists.
CEILING; The concentration that should not be exceeded in the workplace during any part of the working exposure.
OSHA; Occupational Safety and Health Administration
PEL; Permissible Exposure Limit- A set of time weighted average exposure values, established by OSHA, for a normal 8-hour day and a 40-hour work week.
PPM; Parts per million - unit of measure for exposure limits.
(S) SKIN: Skin contact with substance can contribute to overall exposure.
STEL; Short Term Exposure Limit- Maximum concentration for a continuous 15-minute exposure period.
TLV; Threshold Limit Value - A set of time weighted average exposure limits, established by the ACGIH, for a normal 8-hour day and a 40-hour work week.
FBL; Flammable - At temperatures under 100°F, chemical gives off enough vapor to ignite if a source of ignition is present as tested with a closed cup tester.
HAZARDOUS INGREDIENTS; Chemical substances determined to be potential health or physical hazards by the criteria established in the OSHA Hazard Communication Standard - 29 CFR 1910.1200
HTX; Highly toxic - the probable lethal dose for 70 kg (150 lb.) man and may be approximated as less than 6 teaspoons (2 tablespoons).
IRR; Irritant - Causes reversible effects in living tissues (e.g. inflammation) - primarily skin and eyes.
N/A; Not Applicable - Category is not appropriate for this product.
N/D; Not Determined - Insufficient information for a determination for this item.
RTECS #; Registry of Toxic Effects of Chemical Substances - an unreviewed listing of published toxicology data on chemical substances.
SARA; Superfund Amendments and Reauthorization Act - Section 313 designates chemicals for possible reporting for the Toxics Release Inventory.
SEN; Sensitizer - Causes allergic reaction after repeated exposure.
TOX; Toxic - The probable lethal dose for a 70 kg (150 lb.) man is one ounce (2 tablespoons) or more.

SECTION III: HEALTH HAZARD DATA

ACUTE EFFECT; An adverse effect on the human body from a single exposure with symptoms developing almost immediately after exposure or within a relatively short time.
CHRONIC EFFECT; Adverse effects that are most likely to occur from repeated exposure over a long period of time.
EST'D PEL/TLV; This estimated, time-weighted average, exposure limit, developed by using a formula provided by the ACGIH, pertains to airborne concentrations from the product as a whole. This value should serve as guide for providing safe workplace conditions to nearly all workers.
HMIS CODES; Hazardous Material Identification System - a rating system developed by the National Paint and Coating Association for estimating the hazard potential of a chemical under normal workplace conditions. These risk estimates are indicated by a numerical rating given in each of three hazard areas (Health/Flammability/Reactivity) ranging from a low of zero to a high of 4. A chronic hazard is indicted with a yes. Consult HMIS training guides for Personal Protection letter codes which indicate necessary protective equipment.
PRIMARY ROUTE OF ENTRY; The way one or more hazardous ingredients may enter the body and cause a generalized-systemic or specific-organ toxic effect.
ING; Ingestion - A primary route of exposure through swallowing of material.
INH: Inhalation - A primary route of exposure through breathing of vapors.
SKIN; A primary route of exposure through contact with the skin.

SECTION IV: SPECIAL PROTECTION INFORMATION

Where respiratory protection is recommended, use only MSHA and NIOSH approved respirators and dust masks.
MSHA; Mine Safety and Health Administration
NIOSH; National Institute for Occupational Safety and Health.

SECTION V: PHYSICAL DATA

EVAPORATION RATE; it refers to the rate of change from the liquid state to the vapor state at ambient temperature and pressure in comparison to a given substance (e.g. water).
pH; A value representing the acidity or alkalinity of an aqueous solution (Acidic pH = 1; Neutral pH = 7; Alkaline pH = 14)
PERCENT VOLATILE; The percentage of the product (liquid or solid) that will evaporate at 212°F and ambient pressure.
SOLUBILITY IN WATER; A description of the ability of th product to dissolve in water.

SECTION VII: REACTIVITY DATA

HAZARDOUS DECOMPOSITION; Breakdown products expected to be produced upon product decomposition or fire.
INCOMPATIBILITY; Material contact and conditions to avoid to prevent hazardous reactions.
POLYMERIZATION; Indicates the tendency of the product's molecules to combine in a chemical reaction releasing excess pressure and heat.
STABILITY; Indicates the susceptibility of the product to spontaneously and dangerously decompose.

SECTION VIII: SPILL AND DISPOSAL PROCEDURES

RCRA WASTE NOS; RCRA (Resource Conservation and Recovery Act) waste codes (40 CFR 261) applicable to the disposal of spilled or unusable product from the original container.

SECTION X: TRANSPORTATION DATA

CWA; Clean Water Act
RQ; Reportable Quantity - The amount of the specific ingredient that, when spilled to the ground and can enter a storm sewer or natural watershed, must be reported to the National Response Center, and other regulatory agencies.
TSCA: Toxic Substances Control Act - a federal law requiring all commercial chemical substances to appear on an inventory maintained by the EPA.

DISCLAIMER

All statements, technical information and recommendations contained herein are based on available scientific tests or data which we believe to be reliable. The accuracy and completeness of such data are not warranted or guaranteed. We cannot anticipate all conditions under which this information and our products, or the products of other manufacturers in combination with our products, may be used. Zep assumes no liability or responsibility for loss or damage resulting from the improper use or handling of our products, from incompatible product combinations, or from the failure to follow instructions, warnings, and advisories in the product's label and Material Safety Data Sheet.

(Notice Revised 8/91)