

MATERIAL SAFETY DATA SHEET

TIMKEN AUTOMOTIVE WHEEL BEARING GREASE

1. PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME Timken Automotive Wheel Bearing Grease

PRODUCT NO. GR224

SUPPLIER The Timken Corporation
81835 Dueber Avenue
P.O. Box 6930
Canton, OH 44706-0930

EMERGENCY CONTACT INFOTRAC
U.S. and Canada - (800) 535-5053
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Date of last issue January 8, 2009

2. COMPOSITION AND INFORMATION ON INGREDIENTS

INGREDIENT NAME	CAS No.	WEIGHT
LUBRICATING OILS, PETROLEUM, BASE OILS, HIGHLY REFINED	Mixture**(2)	87-93 %
*PHOSPHORODITHIOIC ACID, O,O-DI-C1-14-ALKYL ESTERS, ZINC SALTS (TYPE B)	68649-42-3B	1-5 %
*OCTADECANOIC ACID, 12-HYDROXY-, MONOLITHIUM SALT	7620-77-1	1-5 %
*ANTIMONY DIALKYL DITHIOCARBAMATE (NJTSRN 800983-5015P OR CAS# 15890-25-2)	Proprietary	<0-0.5 %

* This chemical(s) is hazardous according to OSHA/WHIMIS criteria

COMPOSITION COMMENTS

Refer to section eight for exposure limits on ingredients.
Chemical ingredients not regulated by OSHA, SARA, state or federal agencies are treated confidentially. **(2) The base oil for this product can be a mixture of any of the

following highly refined petroleum streams:

CAS 64741-88-4; CAS 64741-89-5; CAS 64741-96-4; CAS 64741-97-5; CAS 64742-01-4; CAS 64742-52-5; CAS 64742-53-6; CAS 64742-54-7; CAS 64742-55-8; CAS 64742-56-9; CAS 64742-57-0; CAS 64742-62-7; CAS 64742-63-8; CAS 64742-65-0; CAS 72623-83-7; CAS 72623-85-9; CAS 72623-86-0; CAS 72623-87-1.

Carcinogenicity: The petroleum base oils contained in this product have been highly refined by a variety of processes including solvent extraction, solvent dewaxing and hydrotreating to remove aromatics and improve performance characteristics. All petroleum base oils contained in this product meet the IP 346 criteria of less than 3 percent PAH's and are not considered carcinogens by IARC, NTP or OSHA.

** (7) The petroleum residual oils for this product can be a mixture of any of the following highly refined petroleum streams:

CAS NO 64742-01-4, CAS NO 64742-57-0, CAS NO 64742-62-7, CAS NO 64742-65-0 and CAS NO 72623-83-7. Carcinogenicity: The petroleum base oils contained in this product have been highly refined by a variety of processes including solvent extraction, solvent dewaxing and/or hydrotreating to remove aromatics and improve performance characteristics. None of the oils used are listed as a carcinogen by NTP, IARC, or OSHA.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

INHALATION	Inhalation hazard at room temperature is unlikely due to the low volatility of this product. Heating can generate vapors that may cause respiratory irritation, nausea and headaches.
INGESTION	May cause stomach pain or vomiting.
SKIN	Prolonged or repeated contact leads to drying of skin.
EYES	May be slightly irritating to eyes.
SENSITIZATION	No known information.
CARCINOGENICITY	IARC: Not listed as a Group 1, 2A, or 2B agent. OSHA: Not regulated. NTP: Not listed.
TERATOGENICITY	No known information.
MUTAGENICITY	No known information.
HEALTH WARNINGS	INHALATION. Heating can generate vapors that may cause respiratory irritation, nausea and headaches. Inhalation hazard at room temperature is unlikely due to the low volatility of this product. SKIN CONTACT. Repeated or prolonged contact can result in drying of the skin. EYE CONTACT. Slightly irritating. INGESTION. Can cause stomach ache and vomiting.
ROUTE OF ENTRY	Inhalation. Skin and/or eye contact. Ingestion.

4. FIRST AID MEASURES

INHALATION	Move the exposed person to fresh air at once. For breathing difficulties oxygen may be necessary. Get medical attention if any discomfort continues.
EYES	Rinse with water. Contact physician if discomfort continues.
SKIN	Remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention if any discomfort continues.
	INJECTION INJURY WARNING: If product is injected into or under the skin, or into any

part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

INGESTION

DO NOT INDUCE VOMITING! Get medical attention immediately!

5. FIRE FIGHTING MEASURES

FLASH POINT (°C)	232 (450°F) Cd OC (Cleveland open cup).
FLAMMABILITY LIMIT - LOWER(%)	N/D
FLAMMABILITY LIMIT - UPPER(%)	N/D
EXTINGUISHING MEDIA	Water spray, fog or mist. Foam. Carbon dioxide (CO2). Dry chemicals, sand, dolomite etc.
SPECIAL FIRE FIGHTING PROCEDURES	Use water to keep fire exposed containers cool and disperse vapors. Water spray may be used to flush spills away from exposures and dilute spills to non-flammable mixtures. Avoid water in straight hose stream; will scatter and spread fire. Keep run-off water out of sewers and water sources. Dike for water control.
UNUSUAL FIRE & EXPLOSION HAZARDS	Volume and pressure increases strongly when heated. Risk of container explosion in fire.
HAZARDOUS COMBUSTION PRODUCTS	Acrid smoke/fumes. Oxides of: Carbon. Phosphorus. Sulfur.
PROTECTIVE MEASURES IN CASE OF FIRE	Self-contained breathing equipment and chemical resistant clothing recommended.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS	Minimize skin contact.
PRECAUTIONS TO PROTECT THE ENVIRONMENT	Keep product out of sewers and watercourses by diking or impounding. Advise authorities if product has entered or may enter sewers, watercourses or extensive land areas. Assure conformity with applicable government regulations.
SPILL CLEAN-UP PROCEDURES	Provide good ventilation. Use appropriate protective clothing. Carefully collect spilled material in closed containers and leave for disposal according to local regulations. Do not let washing down water contaminate ponds or waterways. Rinse area with water.

7. HANDLING AND STORAGE

HANDLING PRECAUTIONS	Keep away from heat, sparks and open flame. Ventilate well, avoid breathing vapors. Use approved respirator if air contamination is above accepted level. Containers should be kept tightly closed. Avoid spilling, skin and eye contact. Eye wash and emergency shower must be available at the work place.
STORAGE PRECAUTIONS	Keep away from heat, sparks and open flame. Store separated from: Acids. Oxidizing materials.
STORAGE CRITERIA	Chemical storage.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

COMPONENT	STD	TWA	STEL	TWA	STEL
LUBRICATING OILS, PETROLEUM, BASE OILS, HIGHLY REFINED	OSHA			5 mg/m ³ (oil mist)	
	ACGIH			5 mg/m ³ (oil mist)	10 mg/m ³ (oil mist)
ANTIMONY DIALKYL DITHIOCARBAMATE (NJTSRN 800983-5015P OR CAS# 15890-25-2)	OSHA			0.5 mg/m ³ as Sb	
	ACGIH			0.5 mg/m ³ as Sb	

PROTECTIVE EQUIPMENT



ENGINEERING CONTROLS

Use engineering controls to reduce air contamination to permissible exposure level.

VENTILATION

No specific ventilation requirements noted, but forced ventilation may still be required if air contamination exceeds acceptable level.

RESPIRATORS

No specific recommendation made, but respiratory protection may still be required under exceptional circumstances when excessive air contamination exists.

PROTECTIVE GLOVES

Chemical resistant gloves required for prolonged or repeated contact. Use protective gloves made of: Neoprene, nitrile, polyethylene or PVC.

EYE PROTECTION

Use eye protection.

PROTECTIVE CLOTHING

Wear appropriate clothing to prevent repeated or prolonged skin contact.

HYGIENIC WORK PRACTICES

Wash at the end of each work shift and before eating, smoking and using the toilet.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE	Grease.		
COLOR	Red.		
ODOR	Mild (or faint). Petroleum.		
SOLUBILITY DESCRIPTION	Insoluble in water.		
SPECIFIC GRAVITY	0.90		
VAPOR DENSITY (air=1)	> 5		
VAPOR PRESSURE	< 0.1 mmHg	Temperature (°C)	20 (68°F)
EVAPORATION RATE	< 0.01	Reference	BuAc=1
pH-VALUE, CONC. SOLUTION	N/A		

10. STABILITY AND REACTIVITY

STABILITY	Normally stable.
CONDITIONS TO AVOID	Avoid contact with acids and oxidizing substances.
HAZARDOUS POLYMERIZATION	Will not polymerize.
HAZARDOUS DECOMPOSITION PRODUCTS	Oxides of: Carbon. Phosphorus. Sulfur.

11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION No experimental toxicological data on the preparation as such is available.

COMPONENT	LUBRICATING OILS, PETROLEUM, BASE OILS, HIGHLY REFINED
TOXICOLOGICAL DATA	Carcinogenicity. IP 346 <3%
TOXIC DOSE - LD 50	> 5000 mg/kg (oral rat)
TOXIC DOSE - LD 50 SKIN	> 2000 mg/kg (skn rbt)
TOXIC CONC. - LC 50	No Information Available (NIA).
COMPONENT	PHOSPHORODITHIOIC ACID, O,O-DI-C1-14-ALKYL ESTERS, ZINC SALTS (TYPE B)
TOXIC DOSE - LD 50	4739 mg/kg (oral rat)
TOXIC DOSE - LD 50 SKIN	> 2000 mg/kg (skn rbt)
COMPONENT	OCTADECANOIC ACID, 12-HYDROXY-, MONOLITHIUM SALT
TOXIC DOSE - LD 50	No Information Available (NIA).
TOXIC CONC. - LC 50	No Information Available (NIA).
COMPONENT	ANTIMONY DIALKYL DITHIOCARBAMATE (NJTSRN 800983-5015P OR CAS# 15890-25-2)
TOXIC CONC. - LC 50	100 ppm (inh-rat)

12. ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION	No data on possible environmental effects have been found.
COMPONENT	PHOSPHORODITHIOIC ACID, O,O-DI-C1-14-ALKYL ESTERS, ZINC SALTS (TYPE B)
COMPONENT	OCTADECANOIC ACID, 12-HYDROXY-, MONOLITHIUM SALT
COMPONENT	ANTIMONY DIALKYL DITHIOCARBAMATE (NJTSRN 800983-5015P OR CAS# 15890-25-2)

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS Spilled material, unused contents and empty containers must be disposed of in accordance with local, state and federal regulations.

14. TRANSPORT INFORMATION

DOT HAZARD CLASS Not regulated.

IDENTIFICATION No. N/A

TDGR CLASS Not Regulated.

SEA TRANSPORT NOTES Not regulated per IMDG.

AIR TRANSPORT NOTES Not regulated per IATA.

15. REGULATORY INFORMATION

US FEDERAL REGULATIONS

COMPONENT	SARA 302	CERCLA	SARA 313
OCTADECANOIC ACID, 12-HYDROXY-, MONOLITHIUM SALT	No	No	No
ANTIMONY DIALKYLDITHIOCARBAMATE (NJTSRN 800983-5015P OR CAS# 15890-25-2)	No	***	N010 - Sb
LUBRICATING OILS, PETROLEUM, BASE OILS, HIGHLY REFINED	No	No	No
PHOSPHORODITHIOIC ACID, O,O-DI-C1-14-ALKYL ESTERS, ZINC SALTS (TYPE B)	No	***	N982 - Zn

REGULATORY STATUS

*** Indicates that no RQ is assigned to this generic or broad class, although the class is a CERCLA hazardous substance. See 50 Federal Register 13456 (April 4, 1985). Values in Section 313 column represent Category Codes for reporting under Section 313.

CLEAN AIR ACT

SARA HAZARD CATEGORIES Acute Chronic

US STATE REGULATIONS

COMPONENT	CA	MA	FL	MN	NJ	PA	RI
LUBRICATING OILS, PETROLEUM, BASE OILS, HIGHLY REFINED					Yes	Yes	
PHOSPHORODITHIOIC ACID, O,O-DI-C1-14-ALKYL ESTERS, ZINC SALTS (TYPE B)				Yes	Yes	EH	
ANTIMONY DIALKYLDITHIOCARBAMATE (NJTSRN 800983-5015P OR CAS# 15890-25-2)				Yes		EH	

STATE REGULATORY STATUS CALIFORNIA PROPOSITION 65: This product may contain the following chemical(s)

considered by the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 as causing cancer or reproductive toxicity, and for which warnings are now required:

Toluene, developmental hazard, CAS # 108-88-3 <10 ppm

PENNSYLVANIA RIGHT-TO-KNOW: This product contains the following chemicals that the state of Pennsylvania has identified as Special Hazardous Substances (SHS), Environmental Hazards (EH), or both (ESHS). The PA regulations require that the MSDS identify all SHS or EH chemicals by chemical name, common name, and CAS Number if they comprise 0.01% or more.

Antimony compounds regulated under CERCLA and SARA 313, Environmental Hazard
Zinc compounds regulated under CERCLA and SARA 313, Environmental Hazard

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM - WHMIS

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

CONTROLLED PRODUCT CLASSIFICATION

D2B - Irritating and/or Chronically Toxic Materials

Risk phrases

R-22 Harmful if swallowed.
R-36/37/38 Irritating to eyes, respiratory system and skin.
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F

GLOBAL INVENTORIES

COMPONENT	CAN	US	EU	AUS	JAP	KOR	PHLP	CHN
LUBRICATING OILS, PETROLEUM, BASE OILS, HIGHLY REFINED	DSL	Yes	EINECS	Yes	Yes	Yes	Yes	Yes
PHOSPHORODITHIOIC ACID, O,O-DI-C1-14-ALKYL ESTERS, ZINC SALTS (TYPE B)	DSL	Yes	EINECS	Yes	Yes	Yes	Yes	Yes
OCTADECANOIC ACID, 12-HYDROXY-, MONOLITHIUM SALT	DSL	Yes	EINECS	Yes	2-1416	Yes	Yes	Yes
ANTIMONY DIALKYL DITHIOCARBAMATE (NJTSRN 800983-5015P OR CAS# 15890-25-2)	NPRI	Yes	EINECS	Yes	Yes	Yes	Yes	Yes

CANADA CEPA: All components of this product comply with new substance notification requirements under the Canadian Environmental Protection Act (CEPA).

USA (TSCA)

All components in this product are listed on the US Toxic Substances Control Act (TSCA) Inventory or are exempt from TSCA Inventory requirements.

CANADA (DSL)

This product contains one or more components that are NOT LISTED on the Canada Domestic Substances List (DSL) and are NOT EXEMPT from DSL requirements.

16. OTHER INFORMATION

NFPA-HMIS HAZARD RATING

HEALTH	Irritation, minor residual injury (1) - HMIS/NFPA
FLAMMABILITY	Burns only if pre-heated (1) - HMIS/NFPA
REACTIVITY	Normally Stable (0) - HMIS/NFPA
NPCA HMIS HAZARD INDEX	Slight: Slightly Toxic - May cause slight irritation (1).

PERSONAL PROTECTION INDEX B - Safety Eyewear and Gloves

NPCA HMIS FLAMMABILITY INDEX Burns only if pre-heated (1).

NPCA HMIS REACTIVITY INDEX Normally stable (0).

Tariff Code (Schedule B) 2710.19.3750 Lubricating greases, with or without additives.

PREPARED BY James P. McBriarty

DATE 2009-01-08

DISCLAIMER While the information and recommendations set forth herein are believed to be accurate as of the date thereof, the company makes no warranty with respect thereto and disclaims all liability from reliance therein.

*** Information revised since previous MSDS version**

PRINTING DATE: 2009-01-08