MATERIAL SAFETY DATA SHEET
TIMKEN ULTRA HIGH SPEED SPINDLE GREASE

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME TIMKEN ULTRA HIGH SPEED SPINDLE GREASE

PART No. GR233

PRODUCT USE Lubricating Grease

SUPPLIER
The Timken Corporation
1835 Dueber Ave.
P.O. Box 6930
Canton,OH 44706-0930
Tel: (330) 438-3000

CONTACT PERSON David Pierman

2. COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT NAME	CAS No.	WEIGHT
1-DECENE, TETRAMER, MIXED WITH 1-DECENE TRIMER, HYDROGENATED (COMMON NAME: POLYALPHAOLEFINS)	68649-12-7	30-50 %
FATTY ACIDS, C5-C10, ESTERS WITH PENTAERYTHRITOL	68424-31-7	10-30 %
1-DECENE, HOMOPOLYMER, HYDROGENATED (COMMON NAME: POLYALPHAOLEFINS)	68037-01-4	10-30 %
POLYUREA THICKENER	Proprietary	10-30 %
*ALKYL PHOSPHATES, AMINE NEUTRAL	Proprietary	1-5 %

* 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.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW Not regarded as a health hazard under current legislation.

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)	> 204 (400°F) Cd OC (Cleveland open cup).
FLAMMABILITY LIMIT - LOWER(%)	NE
FLAMMABILITY LIMIT - UPPER(%)	NE
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. Nitrogen. 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, PERSONAL PROTECTION

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	Light (or pale). Amber. Yellow.		
ODOR	Mild (or faint).		
SOLUBILITY VALUE (g/100g H2O 20°C)	Negligible		
DENSITY	~ 0.89	**Temperature (°C)**	15.6 (60°F)
VAPOR PRESSURE	< 0.1 mmHg	**Temperature (°C)**	20 (68°F)

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. Nitrogen. Phosphorus. Sulfur.

11. TOXICOLOGICAL INFORMATION

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

12. ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION	No data on possible environmental effects have been found.

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. Non réglementé.

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
1-DECENE, TETRAMER, MIXED WITH 1-DECENE TRIMER, HYDROGENATED (COMMON NAME: POLYALPHAOLEFINS)	No	No	No
FATTY ACIDS, C5-C10, ESTERS WITH PENTAERYTHRITOL	No	No	No
1-DECENE, HOMOPOLYMER, HYDROGENATED (COMMON NAME: POLYALPHAOLEFINS)	No	No	No
POLYUREA THICKENER	No	No	No
ALKYL PHOSPHATES, AMINE NEUTRAL	No	No	No

SARA HAZARD CATEGORIES None

INVENTORIES: COMPONENT	CAN	US	EU	AUS	JAP	KOR	CHN	PHLP
FATTY ACIDS, C5-C10, ESTERS WITH PENTAERYTHRITOL	DSL	Yes	EINECS				Yes	
1-DECENE, HOMOPOLYMER, HYDROGENATED (COMMON NAME: POLYALPHAOLEFINS)	DSL	Yes	Polymer	Yes	Yes	Yes	Yes	Yes
POLYUREA THICKENER		.						
ALKYL PHOSPHATES, AMINE NEUTRAL	DSL	Yes	EINECS	Yes	Yes			Yes
1-DECENE, TETRAMER, MIXED WITH 1-DECENE TRIMER, HYDROGENATED (COMMON NAME: POLYALPHAOLEFINS)	DSL	Yes	EINECS	Yes	Yes		Yes	

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 PERS. PROTECT. INDEX B - Safety Eyewear and Gloves

PREPARED BY James W. Hermann

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DISCLAIMER While the information and recommendations set forth herein are believed to be accurate as of the date thereof, The Timken Corporation makes no warranty with

respect thereto and disclaims all liability from reliance therein.