

MATERIAL SAFETY DATA SHEET

BWI Monotube Shock Absorbers, Struts, Strut Modules & Damper Modules (excludes MagneRide)

SECTION 1: CHEMICAL PRODUCT AND COMPANY INFORMATION

Material Identification

PRODUCT NAME: Monotube Shock Absorbers, Struts, Strut Modules and Damper Modules
(excludes MagneRide)

USE OF THE PRODUCT: Motor vehicle part

Company Identification

All Countries:

TRANSPORT & MEDICAL EMERGENCY

EU (call collect): INFOTRAC 1.352.323.3500

USA: INFOTRAC 1.800.535.5053

BWI North America Inc.
Dayton Ohio (Research Park)
3100 Research Boulevard
Kettering, Ohio USA 45420

SECTION 2: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Physical Appearance:

Metal cylinder with no odor which may have a reservoir, spring seat, coil spring or other components attached.

Immediate Concerns:

The primary hazard associated with this product, as shipped, is that the article contains a hydraulic fluid under inert gas pressure and severe fire conditions could cause it to release fluid due to internal pressure buildup. Hydraulic fluid under pressure within the article also may be released in event of mechanical damage. Emergency responders must wear proper personal protective equipment for the situation to which they are responding.

Hazard Classification

This product is an article and under normal workplace conditions exposure to the contents is unlikely. Products described are not subject to dangerous goods transport regulations. The product is internally pressurized with nitrogen gas up to 551 PSI (38 bar). The health effects information provided below applies only to the liquid and gaseous contents of the article, which could be released if its construction is compromised through damage or excessive wear.

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Acute Human Health Effects (Shock absorber fluid)

Under normal operating conditions and temperatures, this product is not expected to cause adverse health effects

Chronic Human Health Effects (Shock absorber fluid)

N/A

Human Carcinogenicity (Shock absorber fluid)

The components present in this material at concentrations equal to or greater than 0.1% are not listed as carcinogens by IARC, NTP, OSHA or ACGIH, and are not classified as carcinogenic according to Directive 67/548/EC.

Medical Conditions Aggravated by Exposure: (Shock absorber fluid)

None known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

| INGREDIENT | EINECS Number | CAS Number | Weight % | EU Classifications |
|--|---------------|------------|----------|--------------------|
| STEEL ASSEMBLY | NA | NA | 75 - 90 | NA |
| PETROLEUM DISTILLATES, HYDROTREATED LIGHT PARAFFINIC * | 265-158-7 | 64742-55-8 | 5 - 20 | S45, S53 |
| NITROGEN GAS | 231-783-9 | 7727-37-9 | 0.1 - 1 | NA |

NOTE: This product is an article as defined by OSHA 29 CFR 1910.120(c). Entries on this sheet are for the BeijingWest Industries Co., Ltd. Damper as an article. The information in Section 2 applies only to the liquid and gaseous contents of the article, which could be released if the article's construction is compromised through damage or excessive wear. This product is internally pressurized with nitrogen gas up to 551 PSI (38 bar).

*DMSO extract <3% per manufacturer

SECTION 4: FIRST AID MEASURES

Inhalation

(Shock absorber fluid) If vapors or mists are inhaled, remove the victim to fresh air. Monitor for respiratory distress. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Skin Contact

(Shock absorber fluid) If the product contaminates the skin, immediately flush skin with water. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Seek medical attention if irritation or redness develops.

Eye Contact

(Shock absorber fluid) If the product enters the eyes, open victim's eyes under gentle running water. Have victim "roll" eyes. Flush eyes for at least 15 minutes. Seek immediate medical attention, especially if symptoms persist.

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Ingestion

(Shock absorber fluid) If the product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER. If professional advice is not available, do not induce vomiting. Patient should drink one or two glasses of water or milk. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who is unable to swallow. Get immediate medical attention. Take copy of label and MSDS to physician or health professional with victim.

SECTION 5: FIRE FIGHTING MEASURES

Flammable properties

Material may burn if heated to high temperatures. Flash point of the oil in the damper fluid 160°C (320°F).

Hazardous combustion products:

(Shock absorber fluid) May include, but not be limited to, carbon monoxide, carbon dioxide, oxides of nitrogen, various products of partial combustion of hydrocarbons. Under fire conditions partial combustion and decomposition can produce smoke and gases containing unidentified toxic and/or irritating compounds.

Extinguishing Media

Carbon dioxide, foam, dry chemical. DO NOT USE DIRECT STREAMS OF WATER ON POOLS OF SHOCK ABSORBER FLUID. Water may be used to cool fire-exposed dampers.

Fire Fighting Instructions

The shock absorber is internally pressurized and severe fire conditions could cause a hazard. Emergency responders should wear eye protection, self-contained breathing apparatus and full protective equipment. Evacuate personnel to a safe area.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Spill and Leak Response

Guard against slipping. If fluid is released, contain and absorb liquid in inert absorbent and place in suitable containers for later disposal. Do not allow fluid to enter soil, sewers, or waterways.

Personal Precautions

The minimum personal protective equipment required for spill response is eye protection and impervious gloves as described in Section 8 of this MSDS. Properly trained personnel should assess the situation to determine if additional protective garments or equipment may be needed.

Environmental Precautions

Prevent release into sewers, surface waters, or soil.

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SECTION 7: HANDLING AND STORAGE

Handling

Shock absorbers, Strut, Strut assemblies and Damper assemblies contain fluid and gas under high pressure. Do not subject uninstalled units to risk of puncture or mechanical damage.

Storage

Do not expose to excessive heat. Protect containers from physical damage. Store containers in a cool; dry location, away from direct sunlight, or sources of intense heat. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged.

Specific Use

These articles are to be used only for the intended purpose: They are to be installed in motor vehicle suspension systems, in accordance with the vehicle manufacturer's instructions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

None established for the substances present in the articles.

Engineering Controls

None required for normal handling of the article.

Personal Protective Equipment

RESPIRATORY PROTECTION: None needed under normal circumstances of use.

EYE/FACE PROTECTION: Safety glasses

PROTECTIVE CLOTHING: None required for normal circumstances of use. To protect against prolonged contact with released fluid, wear neoprene or nitrile gloves.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Cylindrical steel article which may have a reservoir, spring seat, coil spring or other components attached.

| | |
|------------------------------|--|
| ODOR: | No noticeable odor (article as a whole) |
| ODOR THRESHOLD: | Not applicable (article as a whole) |
| PHYSICAL STATE: | Fluid under gas pressure within article |
| pH: | Not applicable |
| MELTING POINT: | Not applicable |
| BOILING POINT: | Not applicable |
| FLASH POINT: | 160°C (320°F) (for the oil in the damper fluid) |
| FLASH POINT METHOD: | ISO 2592 |
| EVAPORATION RATE (n-BuAc=1): | Not available |
| VAPOR DENSITY (AIR=1): | Not available |
| VAPOR PRESSURE @ 20°C: | Not available |
| DENSITY @ 15°C: | 0.85 g/cm ³ (for the oil in the damper fluid) 7.1-7.8 (typical range for iron) |

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| | |
|----------------------|--|
| VISCOSITY | 1.03 (calculated value for damper fluid) |
| SOLUBILITY IN WATER: | Not applicable |
| ANALYTICAL VOC: | Insoluble |
| THEORETICAL VOC: | Not available |
| | Not available |

SECTION 10: STABILITY AND REACTIVITY

Chemical Stability

Stable at ambient temperatures and under normal storage conditions.

Conditions to Avoid

Avoid extreme temperatures.

Incompatibility with Other Materials

Damper fluid within units: Strong acids, bases, and strong oxidizers

Hazardous Decomposition Products

None known under normal circumstances of use.

Hazardous Polymerization

Will not occur

SECTION 11 TOXICOLOGICAL INFORMATION

General Toxicity Information

Distillates petroleum, hydrotreated light (64742-55-8)

Oral LD50: > 5000 mg/kg (Rat)

Dermal LD50: > 2000 mg/kg (Rabbit)

Inhal LC50: 2.18 mg/L/4H (Rat)

Reproductive Toxicity Information

Listed below is information concerning the effects of this product and its components on the human reproductive system.

Mutagenicity: This product is not reported to produce mutagenic effects in humans.

Embryotoxicity: This product is not reported to produce embryotoxic effects in humans.

Teratogenicity: This product is not reported to cause teratogenic effects in humans.

Reproductive Toxicity: This product is not reported to cause reproductive effects in humans.

Carcinogenicity

The components present in this material at concentrations equal to or greater than 0.1% are not listed as a carcinogen by IARC, NTP, OSHA or ACGIH.

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SECTION 12: ECOLOGICAL INFORMATION

Environmental Fate & Ecotoxicity Data

Due caution should be exercised to prevent release of the fluid material to the aquatic or terrestrial environment. Not expected to be acutely toxic to aquatic organisms, waste treatment organisms, and the germination and early growth of plants.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal

When shock absorbers have reached their end of life, they should be drilled open, the compressed nitrogen gas released (depressurized) and the oil drained. Recycle damper as scrap metal. Treat drained oil same as used motor oil. Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority.

SECTION 14: TRANSPORT INFORMATION

Shipping Information

Products described are not subject to the following dangerous goods transport regulations:

U.S. Department of Transportation, Hazardous Materials Regulations 49 CFR Parts 100-180
International Civil Aviation Organization Technical Instructions (ICAO TI)
International Air Transport Association (IATA) Dangerous Goods Regulation International
Maritime Dangerous Goods (IMDG)
Agreement on the International Carriage of Dangerous Goods by Road (ADR), Rail (RID) and
Inland Waterways (ADN)
Canadian Transportation of Dangerous Goods Regulation (TDGR)
Mexican Regulations for the Land Transportation of Hazardous Materials and Wastes.

SECTION 15: REGULATORY INFORMATION

US Federal Regulations

A: General Product Information

No additional information available.

B: Component Analysis

The components of this product are not subject to the reporting requirements of SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

C: Component Marine Pollutants

No component of this product is listed as a Marine Pollutant (49 CFR 172.101, Appendix B).

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D: Hazardous Air Pollutants

The components of this material are not considered hazardous air pollutants under the US Clean Air Act.

E: Ozone Depleting Chemicals

No ozone depleting chemicals are present in this product.

State Regulations

A: General Product Information

Other state regulations may apply. Check individual state requirements.

B: Component Analysis - WHMIS IDL

None of the components in this product are present on the Canadian Hazardous Products Act Ingredient Disclosure List.

Labeling according to EEC Directive

A: Symbols

None

B: R-phrases

None

C: S-phrases

S15 – Keep away from heat

S59 – Refer to manufacturer for information on recovery and recycling

Definitions of R- and S-phrases listed in Section 3

S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S53: Avoid exposure - obtain special instructions before use.

Additional Regulatory Information

A: Component Analysis – Inventory

All components of this product have been checked against the non-confidential TSCA inventory by CAS Registry Number. All components are listed on the TSCA section 8(b) inventory.

B: Component Analysis - Inventory

| Component | CAS# | TSCA | EINECS | DSL | ECL | ENCS | AICS | PICCS | IECCS |
|--|------------|------|--------|-----|-----|------|------|-------|-------|
| PETROLEUM DISTILLATES, HYDROTREATED MIDDLE | 64742-55-8 | YES | YES | YES | YES | NO | YES | YES | YES |
| NITROGEN GAS | 7727-37-9 | YES | YES | YES | YES | NO | YES | YES | YES |

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SECTION 16: OTHER INFORMATION

NFPA Hazard Ratings

| <u>Monotube Shock Absorbers & Struts</u> | | <u>Fluid (contained within shock absorbers)</u> | |
|--|---|---|---|
| Health | 0 | Health | 1 |
| Flammability | 0 | Flammability | 1 |
| Instability | 0 | Instability | 0 |

The information and recommendations set forth herein are taken from sources believed to be accurate as of the date of preparation; however, BeijingWest Industries Co., Ltd. makes no warranty with respect to the accuracy or suitability of the recommendations, and assumes no liability to any use thereof.

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4.00 / 02/03/2010
5.00 / 05/04/2010
6.00 / 06/06/2012

Key/Legend

ppm = parts per million; mg/m³ = milligrams per cubic meter of air; OSHA = Occupational Safety and Health Administration; ACGIH = American Conference of Governmental Industrial Hygienists; TLV = Threshold Limit Value; TWA = 8-hour, time-weighted average; STEL = short-term exposure limit; EPA = Environmental Protection Agency; TSCA = Toxic Substances Control Act; DSL = Canada Domestic Substances List; EINECS = European Inventory of Existing Commercial Chemical Substances; ENCS = Japan Existing & New Chemical Substance; ECL = Korea Existing and Evaluated Chemical Substances Inventory; IESCS = Inventory of Existing Chemical Substances in China; PICCS = Philippines Inventory of Chemicals and Chemical Substances; AICS = Australia Inventory of Chemical Substances; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; PMN = Premanufacture Notification; NFPA = National Fire Protection Association; WHMIS = Workplace Hazardous Materials Identification System; HEPA = High Efficiency Particulate Air; CERCLA = Comprehensive Environmental Response, Compensation and Liability Act; SARA = Superfund Amendments and Reauthorization Act; EPCRA = Emergency Planning and Community Right-to-Know Act (SARA, Title III); 302 = Extremely Hazardous Substance; HAP = Clean Air Act Hazardous Air Pollutant; TPQ = Threshold Planning Quantity; RQ = Reportable Quantity; ADR = International Carriage of Dangerous Goods by Road; IATA = International Air Transportation Association; ICAO = International Civil Aviation Organization; ADNR = International Carriage of Dangerous Goods by Inland Waterways; DRG = Dangerous Goods Regulations; GGVE = German Regulation for the Transportation of Dangerous Goods by Rail (Gefahrgutverordnung Eisenbahn); GGVS = German Regulation for the Transportation of Dangerous Goods by Road (Gefahrgutverordnung Strasse); MDG = Maritime Dangerous Goods; RID = Transport of Dangerous Goods by Rail; UN = United Nations NA = Not Available; NR = Not Regulated

END OF DATA SHEET
FSG-ETS File MS263f