



MATERIAL SAFETY DATA SHEET 物質安全資料表

LUBRICANT GREASE 潤滑油脂

2015.03.01

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION: 化學產品及生產工廠

LABEL IDENTITY 產品名稱:

LITHI-SHIELD GREASE, WEAPON SHIELD GREASE, REEL SHIELD GREASE NLGI#1 & #2.

DESCRIPTION 產品介紹:

Lubricant Grease 潤滑油脂

PRODUCT CAS NO 美國化學文摘登記號.:

Not applicable for mixtures 不適用.

GENERIC/CHEMICAL NAME 一般化學名稱:

"Petroleum lithium grease containing other additives"

鋰基潤滑脂, 包含其他添加物質.

MANUFACTURER/ SUPPLIER 生產商:

Steel Shield Technologies Inc.  
3351 Industrial Blvd., Bethel Park, PA 15102-2543  
Ph: (412) 479-0024  
Fax: (412) 831-3823

EMERGENCY TELEPHONE 緊急電話 #:

Manufacturer: 8am - 5pm EST (M-F) 800-390-1515

SECTION 2. COMPOSITION / INFORMATION OF INGREDIENTS 組成份/ 配方成份資料:

| CHEMICAL INGREDIENT 化學原料                               | COMPOSITION 組成份 % (w/w) |                  |  |  |  |
|--|-------------------------|------------------|--|--|--|
| A. Synthetic Hydrocarbons (Oil)<br>從石油、瀝青中提取礦物油的百分比含量  | 80%                     |                  |  |  |  |
| B. Other Misc. Additives Components 其他添加物:<br>Mixture: | 20%                     |                  |  |  |  |
| Lithium Hydroxy-Stearate (Soap) 羧基硬脂酸鋰基(肥皂)            | 10%                     |                  |  |  |  |
| Zinc Oxide 氧化鋅   | 5%                      |                  |  |  |  |
| Steel Shield EPA 極壓油                                   | 5%                      |                  |  |  |  |
| EXPOSURE LIMITS 曝光指數 OSHA 2004                         | ACGIH 20                | OTHER / COMMENT  |  |  |  |
| CAS No. PEL-TWA #CEILING                               | TWA # STEL              |                  |  |  |  |
| A. Hydrocarbons (as Oil Mist 油霧) 5mg/m3 N/A            | 5 mg/m3 10 mg/m3        | IDLH= 2500 mg/M3 |  |  |  |
| B. Mixture N/A N/A                                     | N/A N/A                 | N/A              |  |  |  |

SECTION 3. HAZARD IDENTIFICATION 危害物質辨識資料:

EMERGENCY OVERVIEW 緊急措施

APPEARANCE / STATE 外觀/型態: Amber Color High Viscous liquid 琥珀色高黏性液體.

HEALTH HAZARDS 健康危害效應:

May be harmful if swallowed 不可吞食 .

"May irritate eyes, skin, digestive/intestinal system. 直接接觸對眼睛皮膚和消化系統做成敏感"

Vapor/Mist(s) can irritate lungs/respiratory system. 油霧或會對呼吸器官做成敏感

POTENTIAL HEALTH EFFECTS 潛在健康危害效應:

INHALATION 吸入性 (Breathing): This product as a low vapor pressure and is not expected to present an inhalation exposure at ambient conditions. 產品於一般室溫不會對人體做成呼吸系統不適。

EYE CONTACT 眼睛接觸: Non-irritating to mildly irritating, but no permanent damage. Prolonged or repeated eye contact may cause inflammation of the membrane linings of the eyelids and covering the eyeball (conjunctivitis). 除非長時間直接與眼睛接觸否則不會出現過敏性或者永久性損害。

SKIN CONTACT 皮膚接觸: Non-irritating to slightly irritating, but no permanent damage. Not likely to be absorbed through the skin in harmful amounts. Prolonged or repeated skin contact may cause drying, cracking, redness, itching, and/or swelling. 除非長時間直接與皮膚接觸否則不會出現過敏性。接觸時間超長或會出現皮膚乾裂紅腫等症狀。

INGESTION 不幸吞食 (Swallowing): Relatively non-toxic to minimal toxicity. May cause throat irritation, nausea, vomiting, and diarrhea. Breathing product into the lungs during ingestion or vomiting may cause lung injury, chemical pneumonia 不幸吞食或通過氣管吸入或會出現腸胃不適和呼吸困難症狀。

#### SECTION 4. FIRST AID MEASURES 緊急措施:

INHALATION 不幸吸入 (Breathing): Evacuate the victim to a safe area with fresh air as soon as possible. If the victim is not breathing, perform artificial respiration. If breathing is difficult, give oxygen. Seek medical attention. 遇到意外將患者移到清新空氣流通地點, 嚴重時進行人工呼吸, 給予氧氣和尋求醫生幫助。

EYE CONTACT 眼睛接觸: Upon contact, remove contact lenses, if worn. Immediately flush eyes with water and continue washing for at least fifteen minutes, keeping eyelids open. If irritation or redness from exposure to vapor develops, move away from exposure into fresh air. Obtain medical attention. 遇到意外將患者移到清新空氣流通地點, 移除隱形眼鏡並用清水沖洗 15 分鐘保持印眼睛張開嚴重時尋求醫生幫助。

SKIN CONTACT 皮膚接觸: Remove contaminated clothing and shoes - launder before reuse. Wash gently and thoroughly the contaminated skin with non-abrasive soap and running water. If irritation persists or if contact has been prolonged, obtain medical attention. 脫去身上所有受污染的衣服鞋襪, 用抗敏肥皂和清水徹底沖洗, 嚴重時尋求醫生幫助。

INGESTION 不幸吞食 (Swallowing): DO NOT induce vomiting because of danger of aspirating liquid into lungs which can result in chemical pneumonia other lung damage, mild to severe pulmonary injury. If spontaneous vomiting occurs, keep head below hips to avoid breathing the product into the lungs. Never give anything by mouth to an unconscious person. Seek medical attention. 不可強制嘔吐避免不慎通過呼吸道吸入。出現持續嘔吐時頭部保持於腰部水平下。只有在清醒情況下給予藥物服用。立即尋求醫生幫助。

PHYSICIAN NOTE 醫療指引: Treat symptomatically and supportively. Treatment may vary with condition of victim and specifics of the incident. 請按患者不同的病態給予適當的治療

#### SECTION 5. FIRE FIGHTING MEASURES 滅火措施:

NAERG '96, GUIDE: 171 - Substances (Non-hazard 無危害).

FLAMMABILITY 可燃性: Low fire hazard - liquid can burn if heated to temperatures above the flashpoint. 低燃性除非加熱至沸點

FLAMMABLE LIMITS 自燃臨界點: Not Available 無. LEL: Not Available 無. UEL: Not Available 無.

FLASHPOINT 閃點 (method): > 240 °C 攝氏. ASTM D92.

FIREPOINT 燃點 (method): > 288 °C 攝氏. ASTM D92

AUTOIGNITION TEMPERATURE 自燃溫度: N/A 無

FIRE HAZARDS 火災危害: Low fire hazard 低燃性. Avoid contact with strong oxidizing agents, including peroxides, chlorine, and strong acids. 避免與強酸性或者氧化物接觸。

EXPLOSION HAZARDS 爆炸危害: Empty containers retain product residue (liquid/vapors) and can be dangerous. DO NOT cut, weld, braze, solder, grind, drill, pressurize, or heat such containers to heat, flame, sparks, static electricity, or other sources of ignition. Empty drum should be completely drained, properly bunged, and promptly returned to a drum reconditioner or properly disposed of. Products are not sensitive to mechanical impact. 空罐或許留有殘留物, 未經徹底清洗不宜切割焊燒加熱等作其他用途, 應立即送交回收站作適當處理。

FIRE FIGHTING MEDIA & INSTRUCTIONS 滅火器材設備: "NAERG '96, GUIDE: 171 - Substances (low hazard 低度危害).

SMALL FIRE: use DRY chemicals, foam, water spray, or CO<sub>2</sub>. LARGE FIRE: use water spray, fog, or foam. For small outdoor fires, portable fire extinguishers may be used. A positive-pressure, self contained breathing apparatus (SCBA - MSHA/NIOSH approved or equivalent) and full-body protective equipment is required for fire emergencies (all indoor fires and any significant outdoor fires). Respiratory and eye protection are required for fire-fighting personnel. Water or foam may cause frothing. Do not scatter spilled material with high pressure water streams. Dike fire-control water for later disposal. Prevent runoff to drinking water supply, streams, and sewers. Continue cooling containers with flooding quantities of water until well after the fire is out. 小火使用乾燥劑泡沫水或 CO<sub>2</sub>. 大火使用水炮氣泡等。室內小火使用一般滅火器。滅火人員應穿戴全保護滅火衣。不要把污染物通過一般渠道沖走以免做成食水下水道系統等污染。火勢減緩或熄滅後應該繼續用水降溫直到完全回到正常室溫止。

#### SECTION 6. HANDLING AND STORAGE 使用和儲存:

STORAGE TEMPERATURE 儲存溫度: Ambient 一般室內溫度

STORAGE PRESSURE 儲存壓力: Atmospheric 一般大氣壓力

LOADING/UNLOADING TEMPERATURE 上下貨架溫度: Not Available 無.

LOADING/UNLOADING PRESSURE 上下貨架壓力: Not Available 無.

HANDLING 使用: Keep away from sources of ignition. Use explosion-proof equipment. Wash hands after handling and before eating. Launder work clothes frequently. 遠離火種,使用防爆安全設備.餐前和使用後清洗雙手.

STORAGE 儲存:NFPA class IIIB storage. Store in tightly closed sealable containers in a cool, dry, isolated, well-ventilated area, and away from strong oxidizing agents. DO NOT pressurize, cut, weld, braze. Solder, drill, or grind containers. Keep containers away from extreme heat, flame, sparks, static electricity, or other sources of ignition; as empty product containers may retain product residues and can be dangerous. DO NOT Store in unlabeled containers. 遠離強氧化劑.使用密封容器儲存於乾燥涼快通風地方.不要意圖加壓切割焊接打容器.未經清洗空容器要遠離高溫火焰火花靜電或火種.

#### SECTION 7. EXPOSURE CONTROL / PERSONAL PROTECTION 曝曬監控 / 個人防護:

EXPOSURE LIMITS 曝曬極限:Oil Mist, if generated 如霧化 PEL (OSHA) 5mg/m<sup>3</sup> - 8hr. TWA  
TLV (ACGIH) 5 mg/m<sup>3</sup> - 8hr. TWA  
STEL (ACGIH) 10 mg/m<sup>3</sup>

ENGINEERING CONTROLS 工程管控 管:

VENTILATION 通風:For normal application, special ventilation is not necessary. If user's operations generate vapors or mists, use ventilation to keep exposure to airborne contaminants below the exposure limit. Make-up air should always be supplied to balance air removed by exhaust ventilation. Keep containers closed when not in use. 保持正常空氣流通,否則應使用強制進出風空氣循環系統.

OTHER 其他:Ensure that eyewash station and safety shower are close to work station.確保設有洗眼和沐浴間於就近處.

PERSONAL PROTECTION 個人防護:

EYES 眼睛:DO NOT wear contact lenses. Eye protection (ie. Safety glasses, safety goggles, and/or face shield) should be determined based on conditions of use 不要配戴隱形眼鏡.安全眼鏡面罩等於適當情況下使用.

SKIN 皮膚:Avoid prolonged or repeated contact with skin. Wear appropriate chemically protective; use of natural rubber or equivalent is NOT recommended. Wear appropriate footwear to prevent product from coming in contact with feet and skin. 不要長時間與產品有肌膚接觸.穿戴適合的抗化學污染的手套,鞋襪和工作服.

RESPIRATORY 呼吸:Respiratory protection is not usually needed unless product is heated or misted. Concentration in air determines the level of respiratory protection needed.一般情況無需使用呼吸器除非產品被加熱至氣化.呼吸器根據實際情況使用.

OTHER PROTECTIVE CLOTHING / EQUIPMENT 其他防護裝置:Where spills and splashed are likely, facilities storing or using this product should be equipped with an emergency eyewash and shower, in the immediate work area 如產品使用期間會出現濺漏就近處應設有洗眼和沐浴間.

WORK HYGIENIC PRACTICES 工作衛生守則:Use good personal hygiene. Wash hands thoroughly with soap and water after handling product and before eating, drinking etc. Clean affected clothing, shoes, and protective equipment before reuse. Discard leather articles, such as shoes, saturated with this product. Do Not wear rings, watches, or similar apparel that could entrap the material and cause a skin reaction.保持個人衛生清潔.進食前清潔雙手,保持工作服器具等不受污染,皮革如吸附大量油料必需棄用.工作期間不要穿戴容易黏附油料的如腕表指環等.

#### SECTION 8. PHYSICAL AND CHEMICAL PROPERTIES 物理和化學特性:

APPEARANCE / STATE 外觀: Viscous liquid.黏液

COLOR 顏色: Amber 琥珀色

ODOR 氣味: Petroleum 石油類.

ODOR THRESHOLD 氣味值: Not Available 無.

BOILING POINT 沸點: Not Available 無.

DENSITY 比重: ~0.95

OCTANOL / H<sub>2</sub>O DIST. COEFF. 辛醇係數: Not Available 無.

VAPOR DENSITY 氣化密度: Not Available 無.

VAPOR PRESSURE 氣化壓力: Not Available 無.

VOLATILITY 揮發性: Not Available 無.

pH 酸鹼度: Not Available 無.

Oxidation Induction Time at 180°C, min. D-5483 95.0

VISCOSITY 黏度: D-445 Viscosity @ 40oF, cst 220.

MELT/POUR POINT 傾點: N/A 不適用.

SOFTENING POINT 軟化點: Not Available 無.

DROPPING POINT 滴漏點: D-2265 Min. 500 oF,

PENETRATION 滲透性: D-217 Worked, 60 s 310 - 340

OIL / H<sub>2</sub>O DIST. COEFF 油水係數.: Not Available 無.

MOLECULAR WT. 分子重: Not Available 無.

IONICITY (in H<sub>2</sub>O) 水含離子: Not Available 無.

DISPERSION PROPERTIES 散發特性: Not Available 無.

SOLUBILITY 溶性(in H<sub>2</sub>O): No 不容於水.

EVAPORATION RATE 氣化率: Not Available 無.

#### SECTION 9. STABILITY AND REACTIVITY 安定性和反應性:

STABILITY 安定性:Stable under normal handling and storage conditions. Not Reactive with water.穩定無水反應.

CONDITIONS TO AVOID 不當操作條件:Extreme Heat, Sparks, and Flames 避免高熱、接近火花和火焰.

CORROSIVITY 腐蝕性:Copper corrosion, 3h, 100 oC 攝氏(ASTM D 4048): 1B.

MATERIALS TO AVOID 不當材料:Reactive with strong oxidizing agents, reducing agents, and/or acids 避免高酸性物質.

HAZARDOUS POLYMERIZATION 有害物質的聚合反應: Will not occur under normal working conditions 常規使用無反應.

CONDITIONS TO AVOID 不當操作條件:None 無.

HAZARDOUS DECOMPOSITION 有害物質的分解: Decomposition and combustion materials may be toxic. During fire or when heated to decomposition, the following materials may be produced Smoke, irritating vapors, unidentified organic compounds, aldehydes, hydrogen sulfide (H<sub>2</sub>S), alkyl mercaptans, sulfides; and oxides of Carbon, Nitrogen, Phosphorus, Zinc, Calcium, and Sulfur. 正常使用無毒素分解, 如加熱或火災引至溫度過高至氧化, 或許刺鼻氣味和不明有機化合物被釋出, 例如醛, 硫化氫, 烷基硫醇, 硫化物等。

#### SECTION 10. TOXICOLOGICAL INFORMATION 毒性資料:

##### SENSITIZATION 過敏:

(Skin 皮膚): Based on toxicity of severely hydrotreated base oil, it is not a skin sensitizer in guinea pig 動物測試無過敏反應。  
(Respiratory Tract 呼吸道): Not expected to be a respiratory tract sensitizer 無過敏反應。

CARCINOGENICITY 致癌性: (reportable quantities 指標數量:  $\geq 1.0\%$ Wt. (0.1%Wt. for carcinogens 致癌物質)

-(OSHA): Contains no chemicals at reportable quantities that are listed as carcinogens by OSHA 無致癌物質。

-(IARC): Contains no chemicals at reportable quantities that are listed as group 1, 2A, or 2B carcinogens by IARC 無致癌物質。

-(NTP): Contains no chemicals at reportable quantities that are listed as carcinogens by NTP 無致癌物質。

-(ACGIH): Contains no chemicals at reportable quantities that are listed as A1 or A2 carcinogens by ACGIH 無致癌物質。

-(IRIS): Not Available 無。

IMMUNOTOXICITY 免疫毒性: Not Available 無。

TOXICOLOGICALLY SYNERGISTIC PRODUCTS 毒理學協議物質: Not Available 無。

MUTAGENICITY 突變性: Based on actual test results of base oils and results of similar products, severely hydrotreated base oils give negative results when tested for 經實測結果證實以下無負面反應:

a. Salmonella Typhimurium TA98 using the Modified Ames Assay for Petroleum Product 鼠傷寒沙門氏菌。

b. Salmonella-Escherichia Coli / Mammalian -Microsome Reverse Mutation Assay (Ames test) with a Confirmatory Assay. 動物沙門氏菌大腸桿菌

c. Structural Chromosomal Aberrations in Chinese Hamster Ovary (CHO) Cells 變色體結構畸變。

REPRODUCTIVE TOXICITY 生殖毒性: Based on the available animal data, severely hydrotreated base oils do not pose a reproductive risk 動物測試無毒性反應。

TERATOGENICITY / EMBRYOTOXICITY 致畸性 / 胚胎毒性: Based on the available animal data, severely hydrotreated base oils do not pose an embryotoxic / teratogenic risk 動物測試無毒性反應。

OTHER CONSIDERATIONS 其他資料: This product does not require a cancer hazard warning 此產品符合免致癌警告。

#### SECTION 11. ECOLOGICAL INFORMATION 生態資料:

ENVIRONMENTAL FATE 環境影響: The base oil has the potential for degradation by hydroxyl radicals in the troposphere under the influence of sunlight, and by bacteria in soil and water 太陽光照射和細菌影響會降解於水和土壤中。

PERSISTENCE/BIOACCUMULATION POTENTIAL 持久性 / 生態累積性: Not Available 無。

OCTANOL / WATER PART. COEFF. 辛醇 / 水分係數: Not Available 無。

VOLATILE ORGANIC COMPOUNDS (VOC) 揮發性有機化合物: Not Available 無。

BOD<sub>5</sub> and COD: Not Available 無。

PRODUCTS OF BIODEGRADATION 生物降解產品: Not Available 無。

ECOTOXICITY 生態毒性: Base Oils: None to Low acute toxicity to aquatic organisms 對海洋生態毒性低或無。

Freshwater Fish 淡水魚類: LC<sub>50</sub> (Rainbow Trout)  $\rightarrow$  400,000 ppm in 96h = 0% mortality.

Freshwater Invertebrates 淡水無脊椎動物: Not Available 無。

Algae 藻類: Not Available 無。

Saltwater Fish 海水魚: Not Available 無。

Saltwater Invertebrates 海水無脊椎動物: Not Available 無。

Bacteria 菌: EPS 1/RM/24 Microtox Test (Luminescent Bacteria) 生物毒性測試- PASS 合格。

Miscellaneous 雜項: LC<sub>50</sub> (Mysidopsis Bahai)  $\rightarrow$  500,000 ppm in 96h.

ADDITIONAL REMARKS 加注: base oils are biodegradable in 28 days 基礎油能夠於 28 天內完成生態分解。

#### SECTION 12. DISPOSAL CONSIDERATIONS 廢棄物處理參考:

不建議通過廢水渠或者下水道處理, 建議根據當地政府條例或者環境保護條例處理

Consult your local or regional authorities 諮詢當地政府機構. Preferred waste management priorities are 廢棄物優先處理:

1. Recycle or reprocess 循環處理
2. Approved incineration with energy recovery 能源再生焚化處理。
3. Disposal at licensed waste disposal facility 合格廢棄物處理系統。

#### SECTION 13. TRANSPORTATION INFORMATION 運輸資料:

DOT: DESCRIPTION / PROPER SHIPPING NAME 貨物資料 / 船名: Not Regulated 無需監督。

HAZARD CLASS 危險性級別: Not Applicable 無。 ID NUMBER 證件號: Not Applicable 無。

SPECIAL INFORMATION 特別資料: None 無. PACKING GROUP 包裝類別: Not Applicable 無.  
SPECIAL LABEL 特殊標籤: Not Evaluated 無必要. SHIPPING CONTAINERS 貨櫃: Not Evaluated 無必要.  
SPECIAL INFORMATION 特別資料: Not Evaluated 無必要.  
LAND : Not regulated for Land Transport 陸路運輸無需監督.  
SEA(IMDG) : Not regulated for Sea Transport according to IMDG-Code 根據國際海運危險品運送章程海路運輸無需監督.  
AIR(IATA): Not regulated for Air Transport 根據國際航空運輸協會章程空運無需監督.  
TRANSPORTATION INCIDENT INFORMATION 運輸 危機處理:For further information relative to spills resulting from transportation incidents, refer to local Department of Transportation's Emergency Response 根據當地交通意外處理守則因道路危難導致油品傾瀉處理 .

#### SECTION 14. ACCIDENTAL RELEASE MEASURES 意外洩漏處理 :

Small Spill:小量

Absorb liquid on vermiculite, floor absorbent or other absorbent material. Persons not wearing proper personal protective equipment should be excluded from area of spil.使用蛭石或其他吸水的材料吸收泄出液體。進入洩漏區域人員必須穿戴適當的個人防護衣物。

Large Spill: 大量

Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required, that a spill has occurred. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. 防止流入下水道，河流或其他水源系統，必要時通知適當的有關部門根據需要處理。進入洩漏區域人員必須穿戴適當的個人防護衣物。

#### SECTION 15. REGULATORY INFORMATION 約章

US Federal Regulations 美國聯邦約章

SARA 302 Components - 40CFR355 Appendix A, B: None 無

SARA 304 CERCLA RQ - 40CFR355 Appendix A, B:

Zinc Compound Class 鋅化合物 - although no RQ is assigned to this generic/broad class, the class is a CERCLA Hazardous substance. However, since an RQ has not been assigned, reporting is not required under CERCLA.未歸納至 CERCLA 約章管制類所以無需要申報。

Section 311/312 Hazard Class - 40CFR370.2:

Immediate(X) Delayed( ) Fire( ) Reactive( ) Sudden Release of Pressure( )

SARA 313 Components - 40CFR372.65:

Section 313 Component(s) CAS Number : ZINC C1-C14 ALKYL DITHIOPHOSPHATE 68649-42-3 (Zinc Compound Class)

International Regulations 國際約章: Inventory Status: Not determined 無

Not dangerous 非危險性 for conveyance under UN, ADR/RID, IMO and IATA/ICAO.

All components comply with TSCA 製造物料符合 TSCA 有毒物質控制條例要求. EU labeling not required 歐盟標籤不適用.

#### SECTION 16. OTHER INFORMATION: 其他資料

The information accumulated herein is believed to be accurate but is not warranted by the company. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. 我公司認為此資料內容可以被視為是準確的，但不保證以後不會受到修正。建議收件人于適用自己的情況下決定是否需要提前確認資訊是最新的。