



MATERIAL SAFETY DATA SHEET 物质安全资料表

Lubricant OIL 基础油, All SEA Grades 32/46/68/100

2014.OCT.16

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION: 化学产品及生产工厂

LABEL IDENTITY 产品名称: SST-ECI Turbine Oil 基础油
DESCRIPTION 产品介绍: Turbine Oil. 涡轮润滑油
PRODUCT CAS NO 美国化学文摘登记号.: Not applicable for mixtures 不适用.

GENERIC/CHEMICAL NAME 一般化学名称:
"Petroleum hydrocarbon Mixture containing polymer(s), antioxidant(s), ""detergent(s), and other additives"
己烷, 石油碳氢化合物, 包含抗氧化剂, 清洁剂等聚合物质.

MANUFACTURER/ SUPPLIER 生产商: Steel Shield Technologies (Asia Pacific) Ltd
EMERGENCY TELEPHONE 紧急电话 #: +852-25458029 10:00~18:00 hrs Mon-Fri

DISTRIBUTED BY 代理:

Steel Shield Technologies 美國離子能源
809B, 8/F., Block B, Goodview Industrial Building, 香港, 屯門, 建發街 11 號,
11 Kin Fat Street, Tuen Mun, N.T., HK 好景工業大廈, B 座, 8 樓 809B 室
Phone: (852) 2545 8029 Fax: (852) 2545 8030 電話: (852) 2545 8029 傳真: (852) 2545 8030

SECTION 2. COMPOSITION / INFORMATION OF INGREDIENTS 组成份/ 配方成份资料:

NO REPORTABLE HAZARDOUS SUBSTANCE(S) OR COMPLEX SUBSTANCE(S)
无任何有害或复杂的物质

CHEMICAL INGREDIENT 化学原料	COMPOSITION 组成份 % (w/w)
A. Hydrotreated Heavy Paraffinic Distillates (Oil)	≥93 加氢处理的链烷烃 (石油)
B. Petroleum distillates (oil)	0.16-0.24 石油馏出物
C. Zinc Alkyldithiophosphate (as ZnDDP) (as Zn)	≤0.8 二烷基二硫代磷酸锌 ≤0.007 锌
D. Other Misc. Additives Components 其它添加物:	≤1.9 Mixture-3
" Halogenated compound 卤代化合物"	≤3.1
" Succinic Anhydride Disperant/Detergent 琥珀酐分散清洁剂"	(≤0.001 as Ca)
" Mg-Detergent, and Mineral Oil 矿物油清洁剂"	≤1.3
" Aryl amine" 芳胺 EU R22, R43, R50/53	0.08~0.16
" Alkyl phenol" 烷基酚 EU R38, R50/53	0.24~0.48

SECTION 3. HAZARD IDENTIFICATION 危害物质识别资料:

EMERGENCY OVERVIEW 紧急措施

APPEARANCE / STATE 外观/型态: Amber Color Viscous liquid 琥珀色黏性液体.

HEALTH HAZARDS 健康危害效应: NO SIGNIFICANT HAZARD 无显著危害

POTENTIAL HEALTH EFFECTS 潜在健康危害效应:

INHALATION 吸入性 (Breathing): This product as a low vapor pressure and is not expected to present an inhalation exposure at ambient conditions. 产品于一般室温不会对人体造成呼吸系统不适.

EYE CONTACT 眼睛接触: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).除非长时间直接与眼睛接触否则不会出现过敏性或者永久性损害。

SKIN CONTACT 皮肤接触: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. 除非长时间直接与皮肤接触否则不会出现过敏性。接触时间超长或会出现皮肤干裂红肿等征状。

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 不幸吞食或通过气管吸入或会出现肠胃不适和呼吸困难征状。

SECTION 4. FIRST AID MEASURES 紧急措施:

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. 遇到意外将患者移到清新空气流通地点,严重时进行人工呼吸,给予氧气和寻求医生帮助。

EYE CONTACT 眼睛接触: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. 遇到意外将患者移到清新空气流通地点,移除隐形眼镜并用清水冲洗 15 分钟保持印眼睛张开严重时寻求医生帮助。

SKIN CONTACT 皮肤接触: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. 脱去身上所有受污染的衣服鞋袜,用抗敏肥皂和清水彻底冲洗,严重时寻求医生帮助。

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.不可强制呕吐避免不慎通过呼吸道吸入。出现持续呕吐时头部保持于腰部水平下。只有在清醒情况下给予药物服用。立即寻求医生帮助。

PHYSICIAN NOTE 医療指引: Treat symptomatically and supportively. Treatment may vary with condition of victim and specifics of the incident. 请按患者不同的病恙给予适当的治療

SECTION 5. FIRE FIGHTING MEASURES 灭火措施:

NAERG '96, GUIDE: 171 - Substances (low to moderate hazard 低至中度危害)。

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

FLAMMABLE LIMITS 自燃臨界点: LEL: 0.9; UEL:7.0.

FLASHPOINT 闪点 (method): > 219° C 摄氏 COC (ASTM D-92).

AUTOIGNITION TEMPERATURE 自燃温度:N/A 无

FIRE HAZARDS 火灾危害:Low fire hazard 低燃性. Avoid contact with strong oxidizing agents, including peroxides, chlorine, and strong acids.避免与强酸性或者氧化物接触。

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. 空罐或许留有残留物, 未经彻底清洗不宜切割焊烧加热等作其它用途,应立即送交回收站作适当处理。

FIRE FIGHTING MEDIA & INSTRUCTIONS 灭火器材设备:"NAERG '96, GUIDE: 171 - Substances (low to moderate hazard 低至中度危害). SMALL FIRE: use DRY chemicals, foam, water spray, or CO2. 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 ater until well after the fire is out.小火使用干燥剂泡沫水或 CO2.大火使用水炮气泡等.室内小火使用一般灭火器.灭火人员应穿戴全保护灭火衣.不要把污染物通过一般渠道冲走以免做成食水下水道系统等污染.火势减缓或熄灭后应该继续用水降温直到完全回到正常室温止。

SECTION 6. HANDLING AND STORAGE 使用和储存:

STORAGE TEMPERATURE 储存温度: Ambient 一般室内温度

STORAGE PRESSURE 储存压力: Atmospheric 一般大气压力

LOADING/UNLOADING TEMPERATURE 上下货架温度: Not Available 无.

LOADING/UNLOADING PRESSURE 上下货架压力: Not Available 无.

HANDLING 使用: Keep away from sources of ignition. Use explosion-proof equipment. Wash hands after handling and before eating. Launder work clothes frequently. 远离火种,使用防爆安全设备.餐前和使用后清洗双手。

STORAGE 储 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.远离强氧化剂.使用密封容器储存于干燥凉快通风地方.不要意图加压切割焊接拷打容器.未经清洗空容器要远离高温火焰火花静电或火种.

SECTION 7. EXPOSURE CONTROL / PERSONAL PROTECTION 曝晒监控 / 个人防护:

EXPOSURE LIMITS 曝晒 极限:Oil Mist, if generated 如雾化 PEL (OSHA) 5mg/m³ - 8hr. TWA
TLV (ACGIH) 5 mg/m³ - 8hr. TWA
STEL (ACGIH) 10 mg/m³

ENGINEERING CONTROLS 工 程管控 管:

VENTILATION 通风: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. 保持正常空气流通,否则应使用强制进出风空气循环系统.

OTHER 其 他:Ensure that eyewash station and safety shower are close to work station.确保设有洗眼和沐浴间于就近处.

PERSONAL PROTECTION 个人 防护:

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 不要配戴隐形眼镜.安全眼镜面罩等于适当情况下使用.

SKIN 皮 肤: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. 不要长时间与产品有肌肤接触.穿戴适合的抗化学污染的手套,鞋袜和工作服.

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.一般情况无需使用呼吸器除非产品被加热至气化.呼吸器根据实际情况使用. Where local approval authority is absent, respirator users can refer to U.S. NIOSH, European Standard EU-149, or joint Australia-New Zealand AS/NZS 1715/1716 for guidance. 如无当地指引,请参考美国 NIOSH,欧共 EU-149 或澳纽 AS/NZS-1715/1716 标准.

OTHER PROTECTIVE CLOTHING / EQUIPMENT 其他 防护 装置: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 如产品使用期间会出现溅漏就近处应设有洗眼和沐浴间.

WORK HYGIENIC PRACTICES 工作卫生守则: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.保持个人卫生清洁.进食前清洁双手,保持工作器具等不受污染,皮革如吸附大量油料必需弃用.工作期间不要穿戴容易黏附油料的如腕表指环等.

SECTION 8. PHYSICAL AND CHEMICAL PROPERTIES 物理 和 化学 特性:

APPEARANCE / STATE 外 观: Viscous liquid.黏液

COLOR 颜色: Light Amber 淡琥珀色

ODOR 气 味: Petroleum 石油类.

ODOR THRESHOLD 气味值: Not Available 无.

BOILING POINT 沸 点: Not determined (摄氏) 无

DENSITY 比 重: ≥ 0.90 - kg/l @ 15 ° C 摄氏.

OCTANOL / H₂O DIST. COEFF. 辛醇系数: Not Available 无.

VAPOR DENSITY 气 化 密 度: Not determined 无.

VAPOR PRESSURE 气 化 压 力: NA 无 @ 25 ° C 摄氏

Flash Point (method) 閃點: min 200 ° C 摄氏 (ASTM D92)

SOLUBILITY 溶 水 性(in H₂O): Negligible 可忽略.

EVAPORATION RATE 气 化 率: <0.01.

POUR POINT 倾点: max. -12 ° C 摄氏

DMSO EXTRACT 二甲基亚砷 (mineral oil only 只有矿物油), IP-346: <1.3%wt.

LOG POW (n-Octanol/Water Partition Coefficient) 正辛醇/水 分配系数: Not Available 无.

VISCOSITY 黏度: 30-100 cSt @ 40 ° C 摄氏

MELTING POINT 熔点: Not Available 无.

SOFTENING POINT 软化点: Not Available 无.

DROPPING POINT 滴漏 点: Not Available 无.

PENETRATION 渗透性: Not Available 无.

OIL / H₂O DIST. COEFF 油水系数.: Not Available 无.

MOLECULAR WT. 分子重: Not Available 无.

IONICITY (in H₂O) 水含离子: Not Available 无.

DISPERSION PROPERTIES 散发特性: Not Available 无.

VOLATILITY 挥发性: Not determined 无.

pH 酸碱度: Not Available 无.

FREEZING POINT 冰点: Not Available 无.

DECOMPOSITION TEMPERATURE: Not Available 无.

SECTION 9. STABILITY AND REACTIVITY 安定性和反应性:

STABILITY 安 定 性:Stable under normal handling and storage conditions. Not Reactive with water.稳定无水反应.

CONDITIONS TO AVOID 不 当 操 作 条 件:Extreme Heat, Sparks, and Flames 避免加热、接近火花和火焰.

CORROSIVITY 腐蚀性:Copper corrosion, 3h, 100 ° C 摄氏 (ASTM D 0130): N/A (typical)无.

MATERIALS TO AVOID 不 当 材 料:Reactive with strong oxidizing agents, reducing agents, and/or acids 避免高酸性物质.

HAZARDOUS POLYMERIZATION 有害物质的聚合反应: Will not occur under normal working conditions 常规使用无反应。
CONDITIONS TO AVOID 不当操作条件:None 无。

HAZARDOUS DECOMPOSITION 有害物质的分解: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 (H₂S), alkyl mercaptans, sulfides; and oxides of Carbon, Nitrogen, Phosphorus, Zinc, Calcium, and Sulfur.正常使用无毒素分解, 如加热或火灾引至温度过高至气化, 或许刺鼻气味和不明有机化合物被释出, 例如醛, 硫化氢, 烷基硫醇, 硫化物等。

SECTION 10. TOXICOLOGICAL INFORMATION 毒性资料:

SENSITIZATION 过敏:

(Skin 皮肤):Based on toxicity of severely hydrotreated base oil, it is not a skin sensitizer in guinea pig 动物测试无过敏分反应。

(Respiratory Tract 呼吸道):Not expected to be a respiratory tract sensitizer 无过敏分反应..

CARCINOGENICITY 致癌性: (reportable quantities 指标数量: $\geq 1.0\%$ Wt. (0.1%Wt. for carcinogens 致癌物质)

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

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

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

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

-(IRIS): Not Available 无。

IMMUNOTOXICITY 免疫毒性:Not Available 无。

TOXICOLOGICALLY SYNERGISTIC PRODUCTS 毒理学协议物质:Not Available 无。

MUTAGENICITY 突变性: Based on actual test results of base oils and results of similar products, severely hydrotreated base oils give negative results when tested for 经实测结果证实以下无负面反应:

a. Salmonella Typhimurium TA98 using the Modified Ames Assay for Petroleum Product 鼠伤寒沙门氏菌。

b. Salmonella-Escherichia Coli / Mammalian -Microsome Reverse Mutation Assay (Ames test) with a Confirmatory Assay.动物沙门氏菌大肠杆菌

c. Structural Chromosomal Aberrations in Chinese Hamster Ovary (CHO) Cells 变色体结构畸变。

REPRODUCTIVE TOXICITY 生殖毒性:Based on the available animal data, severely hydrotreated base oils do not pose a reproductive risk 动物测试无毒性反应。

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 动物测试无毒性反应。

OTHER CONSIDERATIONS 其他资料: This product does not require a cancer hazard warning 此产品符合免致癌警告。

SECTION 11. ECOLOGICAL INFORMATION 生态资料:

ENVIRONMENTAL FATE 环境影响: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 太阳光照射和细菌影响会降解于水和土壤中。

PERSISTENCE/BIOACCUMULATION POTENTIAL 持久性 / 生态累积性:Not Available 无。

OCTANOL / WATER PART. COEFF. 辛醇 / 水分系数:Not Available 无。

VOLATILE ORGANIC COMPOUNDS (VOC)挥发性有机化合物:Not Available 无。

BOD5 and COD:Not Available 无。

PRODUCTS OF BIODEGRADATION 生物降解产品:Not Available 无。

ECOTOXICITY 生态毒性:Base Oils: None to Low acute toxicity to aquatic organisms 对海洋生态毒性低或无。

Freshwater Fish 淡水鱼类:LC50 (Rainbow Trout)-> 400,000 ppm in 96h = 0% mortality.

Freshwater Invertebrates 淡水无脊椎动物:Not Available 无。

Algae 藻类:Not Available 无。

Saltwater Fish 海水鱼:Not Available 无。

Saltwater Invertebrates 海水无脊椎动物:Not Available 无。

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

Miscellaneous 杂项:LC50 (Mysidopsis Bahai)-> 500,000 ppm in 96h.

ADDITIONAL REMARKS 加注:base oils are biodegradable in 28 days 基础油能够于 28 天内完成生态分解。

SECTION 12. DISPOSAL CONSIDERATIONS 废弃物处理参考:

不建议通过废水渠或者下水道处理。建议根据当地政府条例或者环境保护条例处理

Consult your local or regional authorities 咨询当地政府机构。Preferred waste management priorities are 废弃物优先处理:

1. Recycle or reprocess 循环处理
2. Approved incineration with energy recovery 能源再生焚化处理。
3. Disposal at licensed waste disposal facility 合格废弃物处理系统。

SECTION 13. TRANSPORTATION INFORMATION 运输资料:

DOT:DESCRIPTION / PROPER SHIPPING NAME 货物资料 / 船名: Not Regulated 无需监督.
HAZARD CLASS 危险性级别: Not Applicable 无. ID NUMBER 证件号: Not Applicable 无.
SPECIAL INFORMATION 特别资料: None 无. PACKING GROUP 包装类别: Not Applicable 无.
SPECIAL LABEL 特殊标签: Not Evaluated 无必要. SHIPPING CONTAINERS 货柜: Not Evaluated 无必要.
SPECIAL INFORMATION 特别资料: Not Evaluated 无必要.
TRANSPORTATION INCIDENT INFORMATION 运输 危机处理:For further information relative to spills resulting from transportation incidents, refer to local Department of Transportation's Emergency Response 根据当地交通意外处理守则因道路危难导致油品倾泻处理.

SECTION 14. ACCIDENTAL RELEASE MEASURES 意外泄漏处理

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.使用蛭石或其它吸水的材料吸收泄出液体。进入泄漏区域人员必须穿戴适当的个人防护衣物。

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, 河流或其它水源系统, 必要时通知适当的有关部门根据需要处理。进入泄漏区域人员必须穿戴适当的个人防护衣物。

SECTION 15. REGULATORY INFORMATION

US Federal Regulations 美国联邦约章

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

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

Zinc Compound Class 锌化合物 - 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.未归纳至 CERCLA 约章管制类所以无需要申报.

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 国际约章: Inventory Status: Not determined 无

SECTION 16. OTHER INFORMATION: 其它资料

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. 我公司认为此资料内容可以被视为是准确的, 但不保证以后不会受到修正. 建议收件人于适用自己的情况下决定是否需要提前确认信息是最新的。