MATERIAL SAFETY DATA SHEET

Date of Issue: NOV 4, 2014  Technical Review Date: APR 11, 2016  Version: D0002.0001

Section 1 - Product and Company Identification

LSO

Product name
- LSO

Recommended use and restriction on use
- General use : NOT AVAILABLE
- Restriction on use : NOT AVAILABLE

Manufacturer / Supplier / Distributer information
- Manufacturer information
  - Company name : DON CO., LTD
  - Address 1 : 12-17, DARAM-RO 57BEON-GIL, DOCHEOK-MYEON
  - Address 2 : GWANGJU-SI, GYEONGGI-DO, KOREA
  - Dept. : QUALITY CONTROL DEPT.
  - Telephone number : 82-31-769-2475(DON HEAD OFFICE)
  - Emergency telephone number : 82-31-769-2475 (443)
  - Fax number : 82-31-769-2479
  - E-mail address : dcresearch@don21c.com
- Supplier/Distributor information
  - Company name : DON CO., LTD
  - Address 1 : 12-17, DARAM-RO 57BEON-GIL, DOCHEOK-MYEON
  - Address 2 : GWANGJU-SI, GYEONGGI-DO, KOREA
  - Dept. : OVERSEAS SALES/BUSINESS/MARKETING DEPT.
  - Telephone number : 82-31-769-2475(DON HEAD OFFICE)
  - Emergency telephone number : 82-31-769-2475 (407)
  - Fax number : 82-31-769-2479
  - E-mail address : don@don21c.com
Section 2 - Hazards Identification, Including Emergency Overview

LSO

Classification of the substance or mixture
NOT A HAZARDOUS SUBSTANCE OR MIXTURE ACCORDING TO REGULATION (EC) NO. 1272/2008.
THIS SUBSTANCE IS NOT CLASSIFIED AS DANGEROUS ACCORDING TO DIRECTIVE 67/548/EEC.

Label elements
THE PRODUCT DOES NOT NEED TO BE LABELLED IN ACCORDANCE WITH EC DIRECTIVES OR RESPECTIVE NATIONAL LAWS.

Labeling according Regulation (EC) No 1272/2008 [CLP]

Other hazards
N/A

Section 3 - Composition/Information on Ingredients

LSO

Ingredient Name: LSO.

General Description: Solid

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>CAS NB</th>
<th>M/W</th>
<th>Symbols</th>
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<tr>
<td>Silicon monoxide</td>
<td>99.99</td>
<td>10097-28-6</td>
<td>44.08 g/mol</td>
<td>-</td>
</tr>
</tbody>
</table>

Section 4 - First Aid Measures

LSO

Description of first aid measures

General advice
CONSULT A PHYSICIAN. SHOW THIS SAFETY DATA SHEET TO THE DOCTOR IN ATTENDANCE.

If inhaled
IF BREATHED IN, MOVE PERSON INTO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. CONSULT A PHYSICIAN.

In case of skin contact
WASH OFF WITH SOAP AND PLENTY OF WATER. CONSULT A PHYSICIAN.

In case of eye contact
FLUSH EYES WITH WATER AS A PRECAUTION.

If swallowed
NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. RINSE MOUTH WITH WATER. CONSULT A PHYSICIAN.

Most important symptoms and effects, both acute and delayed
PROLONGED INHALATION OF CRYSSTALLINE SILICA MAY RESULT IN SILICOSIS, A DISABLING PULMONARY FIBROSIS CHARACTERIZED BY FIBROTIC CHANGES AND MILIARY NODULES IN THE LUNGS, A DRY COUGH, SHORTNESS OF BREATH, EMPHYSEMA, DECREASED CHEST EXPANSION, AND INCREASED SUSCEPTIBILITY TO TUBERCULOSIS. IN ADVANCED STAGES, LOSS OF APPETITE, PLEURITIC PAIN, AND TOTAL INCAPACITY TO WORK. ADVANCED SILICOSIS MAY RESULT IN DEATH DUE TO CARDIAC FAILURE OR DESTRUCTION OF LUNG TISSUE. CRYSSTALLINE SILICA IS CLASSIFIED AS GROUP 1 "KNOWN TO BE CARCINOGENIC TO HUMANS" BY IARC AND "SUFFICIENT EVIDENCE" OF CARCINOGENICITY BY THE NTP., THE CHRONIC HEALTH RISKS ARE ASSOCIATED WITH RESPIRABLE PARTICLES OF 3-4 UM OVER PROTRACTED PERIODS OF TIME. CURRENTLY, THERE IS A LIMITED UNDERSTANDING OF THE MECHANISMS OF QUARTZ TOXICITY, INCLUDING ITS MECHANISMS FOR LUNG CARCINOGENICITY.

ADDITIONAL STUDIES ARE NEEDED TO DETERMINE WHETHER THE CELL TRANSFORMING ACTIVITY OF QUARTZ IS RELATED TO ITS CARCINOGENIC POTENTIAL.

Indication of any immediate medical attention and special treatment needed
N/A

Section 5 - Fire Fighting Measures

LSO

Extinguishing media
Suitable extinguishing media
USE WATER SPRAY, ALCOHOL-RESISTANT FOAM, DRY CHEMICAL OR CARBON DIOXIDE.

Special hazards arising from the substance or mixture
SILICON OXIDES

Advice for firefighters
WEAR SELF CONTAINED BREATHING APPARATUS FOR FIRE FIGHTING IF NECESSARY.

Further information
N/A
Section 6 - Accidental Release Measures

LSO

Personal precautions, protective equipment and emergency procedures
USE PERSONAL PROTECTIVE Equipment. AVOID DUST FORMATION. AVOID BREATHING VAPORS, MIST OR GAS. ENSURE ADEQUATE VENTILATION. EVACUATE PERSONNEL TO SAFE AREAS. AVOID BREATHING DUST.

Environmental precautions
PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TO DO SO. DO NOT LET PRODUCT ENTER DRAINS.

Methods and materials for containment and cleaning up
PICK UP AND ARRANGE DISPOSAL WITHOUT CREATING DUST. SWEEP UP AND SHOVEL. KEEP IN SUITABLE, CLOSED CONTAINERS FOR DISPOSAL.

Reference to other sections
FOR DISPOSAL SEE SECTION 13.

Section 7 - Handling and Storage

LSO

Precautions for safe handling
AVOID CONTACT WITH SKIN AND EYES. AVOID FORMATION OF DUST AND AEROSOLS. PROVIDE APPROPRIATE EXHAUST VENTILATION AT PLACES WHERE DUST IS FORMED.

Conditions for safe storage, including any incompatibilities
STORE IN COOL PLACE. KEEP CONTAINER TIGHTLY CLOSED IN A DRY AND WELL-VENTILATED PLACE.

Specific end uses
N/A

Section 8 - Exposure Controls & Personal Protection

LSO

Control parameters
Components with workplace control parameters
Exposure controls
Appropriate engineering controls
HANDLE IN ACCORDANCE WITH GOOD INDUSTRIAL HYGIENE AND SAFETY PRACTICE. WASH HANDS BEFORE BREAKS AND AT THE END OF WORKDAY.

Personal protective equipment
   Eye/face protection
   SAFETY GLASSES WITH SIDE-SHIELDS CONFORMING TO EN166 USE EQUIPMENT FOR EYE PROTECTION TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR EN 166(EU).

   Skin protection
   HANDLE WITH GLOVES. GLOVES MUST BE INSPECTED PRIOR TO USE. USE PROPER GLOVE REMOVAL TECHNIQUE (WITHOUT TOUCHING GLOVE’S OUTER SURFACE) TO AVOID SKIN CONTACT WITH THIS PRODUCT. DISPOSE OF CONTAMINATED GLOVES AFTER USE IN ACCORDANCE WITH APPLICABLE LAWS AND GOOD LABORATORY PRACTICES.
   WASH AND DRY HANDS.

   THE SELECTED PROTECTIVE GLOVES HAVE TO SATISFY THE SPECIFICATIONS OF EU DIRECTIVE 89/686/EEC AND THE STANDARD EN 374 DERIVED FROM IT.

   Body Protection
   COMPLETE SUIT PROTECTING AGAINST CHEMICALS, THE TYPE OF PROTECTIVE EQUIPMENT MUST BE SELECTED ACCORDING TO THE CONCENTRATION AND AMOUNT OF THE DANGEROUS SUBSTANCE AT THE SPECIFIC WORKPLACE.

   Respiratory protection
   FOR NUISANCE EXPOSURES USE TYPE P95 (US) OR TYPE P1 (EU EN 143) PARTICLE RESPIRATOR. FOR HIGHER LEVEL PROTECTION USE TYPE OV/AG/P99 (US) OR TYPE ABEK-P2 (EU EN 143) RESPIRATOR CARTRIDGES.
   USE RESPIRATORS AND COMPONENTS TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR CEN (EU).

Section 9 - Physical & Chemical Properties
LSO

Physical State: SOLID  Color: BROWN
pH: N/A
Odor: N/A
Melting point: 1.702 °C - lit.
Initial boiling point and boiling range: N/A
Flash point: N/A
Evaporation rate: N/A
Flammability (Solid, gas): N/A
Upper/lower flammability or explosive limits: N/A
Vapor pressure: N/A
Vapor density: N/A
Relative density: 2.13 g/cm³
Water solubility: N/A
Other safety information
N/A

Section 10 - Stability & Reactivity Data
LSO

Reactivity
N/A
Chemical stability
N/A
Possibility of hazardous reactions
N/A
Conditions to avoid
N/A
Incompatible materials
N/A
Hazardous decomposition products
N/A

Section 11 - Toxicological Information
LSO

Information on toxicological effects
Acute toxicity
N/A
Skin corrosion/irritation
N/A

Serious eye damage/eye irritation
N/A

Respiratory or skin sensitization
N/A

Germ cell mutagenicity
N/A

Carcinogenicity
LIMITED EVIDENCE OF CARCINOGENICITY IN HUMAN STUDIES
IARC: GROUP 1: CARCINOGENIC TO HUMANS (QUARTZ)

Reproductive toxicity
N/A

Specific target organ toxicity - single exposure
N/A

Specific target organ toxicity - repeated exposure
INHALATION - MAY CAUSE DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE.

Aspiration hazard
N/A

Potential health effects

<table>
<thead>
<tr>
<th>Mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT IRRITATION.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>HARMFUL IF SWALLOWED.</td>
</tr>
<tr>
<td>Skin</td>
<td>HARMFUL IF ABSORBED THROUGH SKIN. MAY CAUSE SKIN IRRITATION.</td>
</tr>
<tr>
<td>Eyes</td>
<td>MAY CAUSE EYE IRRITATION.</td>
</tr>
</tbody>
</table>

Signs and Symptoms of Exposure
PROLONGED INHALATION OF CRYSTALLINE SILICA MAY RESULT IN SILICOSIS, A DISABLING PULMONARY FIBROSIS CHARACTERIZED BY FIBROTIC CHANGES AND Miliary nodules in the lungs, a dry cough, shortness of breath, emphysema, decreased chest expansion, and increased susceptibility to tuberculosis. In advanced stages, loss of appetite, pleuritic pain, and total incapacity to work. Advanced silicosis may result in death due to cardiac failure or destruction of lung tissue. Crystalline silica is classified as Group 1 "KNOWN TO BE CARCINOGENIC TO HUMANS" by IARC and "SUFFICIENT EVIDENCE" of carcinogenicity by the NTP., THE CHRONIC HEALTH RISKS ARE ASSOCIATED WITH RESPIRABLE PARTICLES OF 3-4 UM OVER PROTRACTED PERIODS OF TIME. CURRENTLY, THERE IS A LIMITED UNDERSTANDING OF THE MECHANISMS OF QUARTZ TOXICITY, INCLUDING ITS MECHANISMS FOR LUNG...
CARCINOGENICITY.
ADDITIONAL STUDIES ARE NEEDED TO DETERMINE WHETHER THE CELL TRANSFORMING ACTIVITY OF QUARTZ IS RELATED TO ITS CARCINOGENIC POTENTIAL.

Additional Information
RTECS: VV7330000

Section 12 - Ecological Information & Environmental Information
LSO

Toxicity
N/A

Persistence and degradability
N/A

Bioaccumulative potential
N/A

Mobility in soil
N/A

Results of PBT and vPvB assessment
N/A

Other adverse effects
N/A

Section 13 - Disposal Considerations
LSO

Waste treatment methods
Product
OFFER SURPLUS AND NON-RECYCLABLE SOLUTIONS TO A LICENSED DISPOSAL COMPANY. DISSOLVE OR MIX THE MATERIAL WITH A COMBUSTIBLE SOLVENT AND BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER.

Contaminated packaging
DISPOSE OF AS UNUSED PRODUCT.

Section 14 - Transport Information
LSO
UN number
ADR/RID: - IMDG: - IATA: -

UN proper shipping name
ADR/RID: NOT DANGEROUS GOODS
IMDG: NOT DANGEROUS GOODS
IATA: NOT DANGEROUS GOODS

Transport hazard class(es)
ADR/RID: - IMDG: - IATA: -

Packaging group
ADR/RID: - IMDG: - IATA: -

Environmental hazards
ADR/RID: NO IMDG MARINE POLLUTANT: NO IATA: NO

Special precautions for user
N/A

Section 15 - Regulatory Information

LSO

THIS SAFETY DATASHEET COMPLIES WITH THE REQUIREMENTS OF REGULATION (EC) NO. 1907/2006.

Safety, health and environmental regulations/legislation specific for the substance or mixture
N/A

Chemical Safety Assessment
N/A

Section 16 - Other Information

LSO

Reference
- THE INFORMATION CONTAINED HEREIN IS BELIEVED TO BE ACCURATE. IT IS PROVIDED INDEPENDENTLY OF ANY SALE OF THE PRODUCT FOR PURPOSE OF HAZARD COMMUNICATION. IT IS NOT INTENDED TO CONSTITUTE PERFORMANCE INFORMATION CONCERNING THE PRODUCT. NO EXPRESS WARRANTY, OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS MADE WITH RESPECT TO THE PRODUCT OR THE INFORMATION CONTAINED HEREIN.
- THIS SAFETY DATA SHEET WAS COMPILED WITH DATA AND INFORMATION FROM THE FOLLOWING SOURCES: KOSHA, NITE, ESIS, NLM, SIDS, IPCS
Issue date
- NOV 4, 2014

Revision number and Last date revised
- REV. 2, APR 11, 2016

Other
- THIS MSDS IS PREPARED ACCORDING TO THE GLOBALLY HARMONIZED SYSTEM (GHS)

DESCRIPTION: LSO
Date of Issue: NOV 4, 2014
Technical Review Date: APR 11, 2016