MATERIAL SAFETY DATA SHEET

1. Product identification

Product code	: PP
Trade name	: Luban 1101S
Chemical name	: Homo polypropylene
Manufacturer Detail	: **Oman Oil Refineries and Petroleum Industries Company SAOC** **Polypropylene Plant** **Sohar industrial Port** **Falaj Al-Qabail, Sohar** **Sultanate of Oman.**
Emergency Number	: ***+ 968 26865151***

2. Composition/Information on ingredients

Common chemical name	: Polypropylene Homopolymer
Formula	: $(-CH2-CHCH_3-)_n$
Generic name	: Polyolefin's
Synonym(s)	: PP
CAS number	: 9003-07-0
Ingredients contributing to the hazard	: None

3. Hazards identification

Potential Acute Health Effects:

Health hazard	**Specific hazards**	**Main symptoms**
Inhalation	When/if inhaled, fines may cause mechanical irritation of the respiratory tract.	Coughing.
Skin hazard	Material is unlikely to cause irritation, but if contact with molten material occurs, treat as for thermal burn	Thermal burns (see also section 4)
Eye hazard	Fines can cause mechanical irritation	Red eyes.
Ingestion	No hazard	N/A

The material is not classified as being a dangerous preparation according to the EC-Directive 88/379 and the subsequent amendments. See also Section 15.

Risk phrases: not applicable.

4. First-Aid measures

Inhalation:

When fumes of molten material have been inhaled

- Move person to fresh air
- Rest in half upright position
- Loosen clothing
- Keep warm.

In case of respiratory problems move person to first aid station for Medical treatment.

Skin contact:

Any molten material on the skin/burns should be cooled (off) as quickly as possible by means of cold water. Cover the wound with sterile cloth and move person to first aid station or hospital for medical treatment.

Attention: never pull off the molten material from the wound.

Eye contact:

Any material entering the eye should be flushed out with copious volumes of water.

Ingestion:

No danger of toxicity, the material is biologically inactive.

5. Fire-fighting measures

Extinguishing media	: Water, water/foam, CO2, ABC fire extinguishing powder.
Suitable extinguishing media	: Water, Dry Chemical, Co2, Foam
Special protective equipment for firefighters	: Respiratory and Eye protection required for fire fighting personnel
Further information	: Resins are combustible materials - molten polypropylene tends to flow or drip and will propagate fire.

Specific Hazards:

Combustion products	: In case of fire, carbon monoxide and toxic and/or irritating oxygen containing organic substances are released.
Product fines	: A spark can ignite an explosive concentration of product fines in air (see Section 7 and 9).
Vapours	: Hot vapours – from heated material – plus air can be extremely inflammable in the case of stochiometric mixtures.
Protection for the fire fighters	: Do not approach fire in confined space without positive pressure self-contained breathing apparatus and full bunker gear i.e.: bunker coats, helmet with face shield, gloves, rubber boots.

Note: Cool fire exposed containers with water.

6. Accidental release measures

- Personal precautions Apply ample grounding with respect to dust explosion dangers caused by released dust from granulate supply (filters). See Section 7.
- Protection skin / eyes and/or hands: see Section 8.
- Prevent generation of dust (to be realized from powder).
- Take great care in immediately preventing further powder or dust release in view of the formation of dust clouds in air.
- Environmental precautions for disposal considerations: see Section 13.
- Cleaning up methods Shovel or sweep up released material.
- Suck up fines or dust with special industrial vacuum cleaner. Avoid the generation of dust clouds.
- Consult an expert on disposal of recovered material and ensure conformity to local regulations

7. Handling and storage

Handling Precautions

General precautions : For safe polymer processing the material should be completely dry.

Personal protection : For more information on personal protection when handling the material see Section 8.

Hygiene measures : Adequate washing facilities, with supplies of mild soap and hand cleanser should be available at all working locations. Solvents should never be used as hand cleansers.
Smoking, eating and drinking in working and storage areas should be prohibited.

Technical measures

Ventilation : general mechanical ventilation system should be installed where -
- Melt processing of the material is carried out;
- Solid material is being grinded or machined;
- Any high temperature processing is carried out (e.g. sealing).

Ventilation : local exhaust, it is advised to install local exhaust ventilation in the vicinity of processing machines.

Prevention of dust generation : Suppression: optimize the piping system used for pneumatic transport (surface, corners, length, velocities).

Filtering: take extreme care of dust explosion danger and apply local grounding where the presence of fines plus static electricity in or near the pneumatic transport lines is very likely.
Note: When handling the granulate normally dust will not be a problem with respect to breathing. During regrinding operations however, the use of a dust mask is advised.

Prevention of fire and explosion: See Section 7.

Storage Precautions

Technical measures	**:** Owing to the electrostatic properties of the material and its fines a grounding installation for storage silos and pneumatic transport is obligatory. Others ways of prevention with respect to electrostatic properties are: inserting i.e. lowering oxygen concentration by means of nitrogen supply, control of transport speed, etc.
Storage conditions	**:** Avoid prolonged storage in open sunlight, high temperatures and/or high humidity as this could well speed up alteration and consequently loss of quality of the material and this could lead to unforeseen dangers. Keep polymer completely dry for good processing. Stack pallets only two high when storing, in order to prevent collapsing.
Incompatible products	**:** not applicable

8. Exposure controls/personal protection

Control parameters	**:** Threshold Limit Value (TLV): a provisional TLC (TWA 8 hours) is advised in Accordance with the TLV of non-toxic nuisance dust - -10 mg/m³ for total dust. -5 mg/m³ for respirable dust.

Personal protection equipment

Respiratory protection	**:** When TLV is accidentally exceeded <u>see section 7</u> (prevention dust generation).
Hand protection	**:** When handling a hot melt, heat resistant gloves should be worn (e.g. when purging a processing machine).
Eye protection	**:** When handling a hot melt, heat resistant face shields should be worn (e.g. when purging a processing machine).
Skin and body protection	**:** Apron, boots and/or full protective suit is not prescribed here; it is up to the decision of the processor.

9. Physical and chemical properties

Polymer properties:

Physical state	: Solid (at +20 °C)
Form	: Granulate / powder
Colour	: Colourless or natural
Odour	: Weak paraffinic
P^H value	: Not applicable
Relative density	: 900-920 kg/m³
Bulk density	: 550-630 kg/m³
Melting point/range	: 155-170 °C
Softening point/range	: 140-148 °C
Viscosity	: Not applicable
Boiling point/range	: Not applicable

Vapour pressure	: Not applicable
Vapour density	: Not applicable
Evaporation rate	: Not applicable
Solubility in water	: Insoluble
Solubility in other substances	: Soluble only in some aromatic hydrocarbons, chlorinated hydrocarbons and/or n- paraffines (>C14) at high temperatures.
Partition coefficient (n-Octanol/water)	: Not applicable
Miscibility	: Not applicable
Volume conductivity	: Low, danger of static charges

Safety properties:

Decomposition Temp.	: >300 °C
Flash point	: >320 °C
Auto ignition Temp.	: >350 °C
Dust Explosive Properties	: Lower Explosion Limit (LEL) Mandatory to remain <10 g/m³ air (Fines <125 µm)
Minimum ignition Temp.	: 428 °C
Dust Explosion Class	: St 1(fines)

10. Stability and reactivity

The material is chemically stable; however under certain conditions hazardous reactions can take place.

Material fines	: Materials fines – accidentally released in air – can result in an explosive concentration (see Sections 6 and 7).
Electrostatic loading	: For information on safety measures regarding electrostatic loading measures see Section 7
Materials to avoid	: Strong oxidants at high temperature
Hazardous decomposition products	: CO, CO2, HYDROCARBONS, SMOKE, ACROLEIN

11. Toxicological information

Acute toxicity	: None (LD50 oral rat >5000 mg/kg)
Local effects	: None
Chronic Effect	: None
Toxicity	: None
Sensitization	: None
Specific effects (carcinogenetic, mutagenicity, teratogenicity, narcosis)	: None

12. Ecological information

Mobility	: None
Persistence/degradability	: Very low UV degradability
Bioaccumulation	: None
Eco toxicity effect	: There is no indication that this material is a risk to the environment.
Aquatic toxicity	: Insoluble nontoxic solid material (no water hazard).

Note: No specific ecological data are available for this product. Please refer to Section 6 for information regarding accidental releases and Section 15 for regulatory reporting information.

13. Disposal Considerations

This material – as well as the packaging there off – presents no danger regarding toxicological and/or ecological considerations. It can be burnt in a controlled way or be disposed of via landfill, or it can be recycled for – possibly less critical – non-food applications.

Note: Additional national or regional provisions may be in force within this matter.

14. Transport information

General precautions	: Keep the material dry during transport
Special precautions	: No special precautions have to be met. This material is not classified regarding the transport of dangerous goods.
GGVSee/IMDG-code	: Not applicable
ICAOTI	: Not applicable
IATA-DGR	: Not applicable
RID/ADR	: Not applicable
UN-number	: Not applicable
GGVE/GGVS	: Not applicable
ADNR	: Not applicable

15. Regulatory information

Labelling according to EEC Directive (EC classification No dangerous preparation).

Note: Additional national legislation may be in force relevant to this matter.

16. Other information

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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