Safety Data Sheet
according to Regulation (EC) No 1907/2006

BioMass Sugar®

SECTION 1: Identification of the substance / mixture and of the company / undertaking

1.1 Product identifier

Chemical name Mixture of Sugarcane extracts and Furfural.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses of the substance or mixture
Nutrient source in specialty crops.

Uses advised against None

1.3 Details of the supplier of the safety data sheet

Manufacturer Illovo Sugar (South Africa) (Pty) Ltd
Address 1 Nokwe Avenue
Ridgeside
Umhlanga Rocks
South Africa
4320
Telephone number +27 31 508 45 88
E-mail address commercialdownstreamsds@illovo.co.za

1.4 Emergency telephone numbers

Emergency
- **Local South Africa** 0800 17 27 43
- **International** +27 82 775 33 05

Medical information
- **South Africa** +27 824 910 160 Bloemfontein Poison Control and Medicine Information Centre
- **South Africa** +27 861 555 777 Poisons Information Helpline of the Western Cape
- **United Kingdom** 844 892 0111 National Poisons Information Service

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

According to Regulation (EC) No. 1272/2008 (EU-GHS / CLP)

Hazard Classes / Hazard Class-, Category- and -Statement Codes

Acute toxicity	Acute Tox. 4, H332
Acute toxicity	Acute Tox. 4, H302
Eye irritation	Eye Irrit. 2, H319
Carcinogenicity	Carc. 2, H351

For full text of Hazard statements: see subsection 2.2.

2.2 Label elements

Hazard pictograms

Signal word Warning

Hazard statements

H332 Harmful if inhaled.

H302	Harmful if swallowed.
H319	Causes serious eye irritation.
H351	Suspected of causing cancer.

Precautionary statements

P201	Obtain special instructions before use.
P261 *	Avoid breathing mist / spray.
P280 *	Wear protective gloves / protective clothing / eye protection.
P301 + P312	IF SWALLOWED: Call a POISON CENTER / doctor / physician if you feel unwell.
P305 + P351 + P338 *	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 *	Call a POISON CENTER / doctor / physician if you feel unwell.
P501	Dispose of contents / container to a specialised processing facility for disposal in accordance with local / regional regulations.

* on label

2.3 Other hazards

The mixture does not meet the criteria for PBT or vPvB according to Regulation 1907/2006.

SECTION 3: Composition / information on ingredients

3.1 Substances

Not applicable.

3.2 Mixtures

Ingredients		Percentage	Classification
Furfural		21 - 23 %	Flam. Liq. 3, H226
CAS-No.	98-01-1		Acute Tox. 2, H330
EC-No.	202-627-7		Acute Tox. 3, H301
Registration No.	01-2119486861-27		Acute Tox. 4, H312
			Eye Irrit. 2, H319
			Skin Irrit. 2, H315
			STOT SE 3, H335
			Carc. 2, H351
			Aquatic Chronic 3, H412

SECTION 4: First aid measures

4.1 Description of first aid measures

Inhalation
Fresh air, rest, half upright position. Get medical advice / attention if you feel unwell.

Skin contact
Remove contaminated clothes, rinse skin with water or shower.

Eye contact
First rinse with plenty of water (remove lenses if possible). If eye irritation persists: get medical advice / attention.

Ingestion
Rinse mouth. Call a doctor / physician if you feel unwell.

4.2 Most important symptoms and effects, both acute and delayed

Eye irritation.

4.3 Indication of any immediate medical attention and special treatment needed

Information on medical attendance

Not necessary.

Special means to provide treatment at the workplace

Not necessary.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Powder, water spray, alcohol-resistant foam, carbon dioxide.

Unsuitable extinguishing media

Water jet, alcohol unstable foam.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

May produce toxic fumes of carbon monoxide if burning.

5.3 Advice for fire-fighters

Protective actions In case of fire: keep containers cool by spraying with water.
Retain contaminated extinguishing water; do not allow entering into the sewage system.
In the case of larger fires: Cordon affected area.

Special protective equipment

Self-contained respiratory protective device.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Information for non-emergency personnel

In the case of large quantities: Use filter respirator for organic vapours (filter type A).
Use personal protective equipment to avoid any contamination of skin, eyes and personal clothes. Assure sufficient ventilation.

Information for emergency responders

If available, observe corporate hazard-control and emergency plans.

6.2 Environmental precautions

In the case of spills: Avoid penetration into the sewage canal, surface water and ground water.
In the case of accidental release: Do not discharge in surface water, sewers or soil.

6.3 Methods and material for containment and cleaning up

Advice on spillage containment

Take up small amounts spilled product with an inert absorbent. Dispose of as hazardous waste.
Dam spilled large amounts in and suck carefully; recycle if possible.

Appropriate clean-up procedures

Collect remainder in inert absorbent and dispose of as hazardous waste. Wash away remainder with water.

6.4 Reference to other sections

See also the sections 8 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations for safe handling

When used indoors: ventilate well.
Only transfer into suited and resistant containers. Containers have to be properly labelled.

Advice on general occupational hygiene

The usual precautionary measures when handling chemicals have to be observed.
Do not eat, drink and smoke in work areas. Wash hands thoroughly with water

and soap.

7.2 Conditions for safe storage, including any incompatibilities

Precautions for safe storage and protection against incompatible substances

Keep away from oxidants, strong acids and strong bases. Store only in original packing.
Keep container tightly closed.

Protection against ambient influences

Protect against heat and solar radiation. Recommended storage temperature: 20 °C.

Maintenance of the integrity of the substance

Not required.

7.3 Specific end use(s)

None.

SECTION 8: Exposure controls / personal protection

8.1 Control parameters

	Limit values				
Furfural	**8 hours (TWA)**		**Short term (15 min.)**		**Notation**
	mg/m³	**ppm**	**mg/m³**	**ppm**	
United Kingdom	8	2	20	5	skin

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Ventilation and local exhaust.

8.2.2 Individual protection measures, such as personal protective

a) Eye/face protection

Safety goggles (EN 166).

b) Skin protection

Hand protection	Gloves butyl rubber 0.7 mm	Breakthrough time > 8 hours (EN 374)
	Gloves neoprene 0.75 mm	Breakthrough time 2 hours (EN 374)
Other	Protective clothing (EN 340).	

c) Respiratory protection

In case of indoor uses and insufficient ventilation: filter respirator for organic vapours (filter type A) (EN 14387).

d) Thermal hazards

Not applicable.

8.2.3 Environmental exposure controls

Direct polluted air of the local exhaust ventilation out of the plant in a manner in accordance with environmental regulations.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Dark brown liquid.
Odour	Sugarcane molasses.
pH (1% solution)	5.0 - 6.5

Melting point / freezing point (˚C)	< 0
Boiling point (˚C) at 1013 hPa	> 100
Flash point (˚C)	65 - 67
Upper / lower explosive limits (vol%)	Not applicable
Relative density (water=1)	1.16 – 1.20
Solubility(ies)	
- Solubility in water at 20 ˚C (g/l)	Emulsifiable
- Solubility in fat	Poor
Decomposition temperature (˚C)	Not applicable
Explosive properties	Non explosive
Oxidising properties	None

9.2 Other information — No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity — Reacts with oxidants, strong acids and bases.

10.2 Chemical stability — Stable at usual storage conditions.

10.3 Possibility of hazardous reactions

No spontaneous polymerisation.

10.4 Conditions to avoid

Temperatures in storage > 40 °C should be avoided. Also contact with direct sunlight, heat sources and air.

10.5 Incompatible materials

Strong acids or alkaline substances and oxidants.

10.6 Hazardous decomposition products

None during handling and storage.

SECTION 11 Toxicological information

11.1 Information on toxicological effects

Acute toxicity

- ***Oral***	LD50 (rat)	778 mg/kg
- ***Dermal***	LD50 (rat)	2 222 mg/kg
- ***Inhalation***	LC50 (rat, 4 hours)	1.32 mg/L (mist)

Serious eye damage/irritation

The mixture is irritating to eyes.

Carcinogenicity

Furfural is suspected of causing cancer.
Concluded that at levels at which no liver toxicity is induced (in rats 265 mg/kg bw/d), tumors will not arise.

11. Likely routes of exposure
2

The mixture can be absorbed into the body by inhalation of mist and after ingestion of the liquid.

SECTION 12: Ecological information

12. Toxicity
1

Furfural

– ***Fish***	LC50 (fresh water, 96 h)	10.5 mg/L
	NOEC (fresh water, 12 d)	0.33 mg/L
– ***Aquatic invertebrates***	EC50 (Daphnia, fresh water, 48 h)	13 mg/L
	NOEC (Daphnia, fresh water, 21 d)	1.9 mg/L
– ***Algae***	NOEC (algae, fresh water, 8 d)	2.7 mg/L

12. Persistence and degradability
2

Biodegradability

– ***Biodegradability in water***

The mixture is readily biodegradable.

– ***Biochemical oxygen demand***

BOD (14 days) 93.5% degradation (Furfural)

12. Bioaccumulative potential
3

Aquatic bioaccumulation

BCF (calculated) 1.41 L/kg (Furfural)

Partition coefficient (log K_{ow}) 0.41 (Furfural)

No remarkable bioaccumulation potential (BCF < 500 and log K_{ow} < 4).

12. Mobility in soil
4

Adsorption/desorption

K_{oc} at 20 °C (calculated) 17.1 L/kg (Furfural)

The product is very mobile in the soil.

12. Results of PBT and vPvB assessment
5

The mixture does not meet the PBT and vPvB criteria according to annex XIII of Regulation (EC) No 1907/2006.

12. Other adverse effects
6

Low hazard to waters (Water hazard class 1, WGK Germany)

SECTION 13: Disposal considerations

13. Waste treatment methods
1

Product disposal Removal to an authorized waste incinerator for solvents or as chemical waste in accordance with local regulations. Do not discharge wastewater into sewer.

Packaging disposal Uncleaned empty package have to be treated like the content. The labelling of uncleaned containers must not be removed.

Waste treatment-relevant information

European waste list (EURAL) 02 01 08

SECTION 14: Transport information

Not regulated for transport of dangerous goods.

SECTION 15: Regulatory information

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

Furfural has been approved as a flavouring agent (Regulation (EC) No 872/2012).

15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out for Furfural.

SECTION 16: Other information

16.1 Changes to the previous version

Previous version	5.6
Changes	Change of the name of the manufacturer.

16.2 Abbreviations and acronyms

DNEL	Derived No Effect Level
DMEL	Derived Minimal Effect Level
EC50	Effect Concentration, 50 percent
ERICard	Emergency Response Intervention Card
GHS / CLP	Globally Harmonised System / Classification, Labelling and Packaging
IC50	Inhibitory Concentration, 50 percent
LC50	Lethal Concentration, 50 percent
LD50	Lethal Dose, 50 percent
NOAEC	No observed adverse effect concentration
NOAEL	No observed adverse effect level
NOEC	No observed adverse effect concentration
NOEL	No observed effect level
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No Effect Concentration
TWA	Time Weighted Average
vPvB	very Persistent and very Bioaccumulative

16.3 Literature references and sources for data

REACH dossier and data from Illovo.

16.4 Full text of Hazard statements which are not written out in full under Sections 2 to 15

For Furfural in subsection 3.2:

H226	Flammable liquids and vapour.
H330	Fatal if inhaled.
H301	Toxic if swallowed.
H312	Harmful in contact with skin.

H315	Causes skin irritation.
H335	May cause respiratory irritation.
H412	Harmful to aquatic life with long lasting effects.

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