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Version: 3

## MATERIAL SAFETY DATA SHEET

### SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier:  
**MICRO GLASS BEAD (REFLECTIVE POWDER)**

1.2. Relevant identified uses of the substance or mixture and uses advised against: For industrial use.

1.3 Details of the supplier of the safety data sheet:

Address: Good Life Innovations Ltd, Unit 15, Basepoint, Denton Island, Newhaven, BN99BA, UK  
Tel: +44 (0) 207 118 3123  
Email: sales@sfxc.co.uk

### SECTION 2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture:

Classification according to Regulation 1272/2008/EC (CLP):

**Not considered as**

**hazardous mixture. H**

**phrases:** none.

Classification according to Regulation 1999/45/EC:

**Not considered as**

**hazardous mixture. R**

**phrases:** -

2.2. Label elements:

**Hazardous**

**substance content:**

**- No labeling**

**required.**

**H phrases:** none.

**P phrases:** none.

2.3. Other hazards

Routes of entry:

inhalation. Health hazard (acute and chronic):

Repeated or prolonged inhalation of dust in excess of permissible exposure limits may result in irritation to the respiratory tract. Chronic respiratory conditions may be aggravated by exposure to high concentrations of dust.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance: Not applicable.

3.2. Mixture:

Description: Contains no free silica. All components are amorphous and non-crystalline.  
Chemical formula: TiO<sub>2</sub>-BaO-SiO<sub>2</sub>

Description	CAS number:	EU number	REACH reg. nr.	Conc. (%)	Classification				
					67/548/EEC		CLP		
					Hazard symbol	R phrase	Hazard pict.	Hazard cat.	H phrase
<b>Titanium dioxide*</b> (TiO <sub>2</sub> )	13463-67-7	236-675-5	-	30-33	-	-	-	-	-
<b>Barium Carbonate*</b> (BaO)	1304-28-5	215-127-9	-	45-55	-	-	-	-	-
<b>Silica*</b> (SiO <sub>2</sub> )	112945-52-5	-	-	12-15	-	-	-	-	-

\* Substance classified by the manufacturer or substance which has no obligatory classification according to the EU regulations.  
Full text of R- and H-phrases: see section 16.

### SECTION 4. FIRST AID MEASURES

4.1. Description of first aid measures:

GENERAL INSTRUCTIONS: No special procedures recommended.

IN CASE OF

INGESTION: Measures:

- Not an expected route of exposure.
- In case of symptoms seek medical advice and show the label where possible.
- Place the victim in a comfortable position.
- Never give anything by mouth and do not induce vomiting if the victim is unconscious.

IN CASE OF INHALATION:

Measures:

- Move the victim to fresh air, loosen clothing and allow to rest.
- If symptoms develop seek medical attention.

IN CASE OF SKIN CONTACT:

Measures:

- Remove contaminated clothing.
- Wash skin with large quantities of soap and water for at least 15 minutes.
- If symptoms develop seek medical attention.

IN CASE OF EYE CONTACT:

Measures:

- In case of any symptoms, call a physician.
- Flush with water for at least 15 minutes while holding the eyelids apart.
- If symptoms persist consult a specialist.

4.2. Most important symptoms and effects, both acute and delayed: Symptoms: Irritation of eyes and respiratory tract.

4.3. Indication of any immediate medical attention and special treatment needed: Treatment: no special procedures recommended.

NOTES TO THE PHYSICIAN: No special procedures recommended.

### SECTION 5. FIREFIGHTING MEASURES

5.1. Extinguishing media:

5.1.1. Suitable extinguishing media:

CO<sub>2</sub>, dry chemical, foam or water spray.

5.1.2. Unsuitable extinguishing media:

None known.

5.2. Special hazards arising from the substance or mixture:

**Not flammable.** Hazardous combustion products: smoke and other combustion products.

The inhalation of combustion products may cause severe damage to health.

5.3. Advice for firefighters:

Wear full protective clothing and self-contained breathing apparatus.

Do not discharge fire extinguishing water into drains, sewers or watercourses. Cool containers exposed to fire with water.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

- 6.1. Personal precautions, protective equipment and emergency procedures:
  - 6.1.1 For non-emergency personnel:  
Keep unprotected people away, allow only well trained experts wearing suitable protective clothing to abide in the field of accident.
  - 6.1.2. For emergency responders:  
Avoid excessive dusting.
- 6.2. Environmental precautions:  
Dispose of spillage and waste in accordance with all applicable environmental regulations. Do not allow to enter sewers, soil, surface or ground water.  
If environmental pollution occurs immediately notify the appropriate authorities.
- 6.3. Methods and material for containment and cleaning up:  
Sweep up or vacuum spilled material and transfer to suitable, properly labelled, sealable waste containers for disposal. During the recovery of the product and the disposal of waste wear suitable personal protective equipment.
- 6.4. Reference to other sections:  
For further and detailed information see section 8 and 13.

**SECTION 7. HANDLING AND STORAGE**

- 7.1. Precautions for safe handling:  
Observe conventional hygiene precautions.  
Handle in accordance with good industrial hygiene and safety practices.  
Contact with water should be avoided at all times.  
Technical measures:  
Provide sufficient ventilation.  
Precautions against fire and explosion:  
No special procedures recommended.
- 7.2. Conditions for safe storage, including any incompatibilities:  
Technical measures and storage condition:  
Store in original, sealed and labelled container only.  
Store in a well-ventilated area easily accessible for cleaning.  
Observe directions on label and instructions for use.  
Incompatible materials: Hydrofluoric, fluorosilicic and phosphoric acids and hot strong alkaline solutions.  
Packaging material: no special recommendations.
- 7.3. Specific end use(s):  
No special recommendations available.

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

8.1. Control parameters:

Exposure limit values:

The EU has not established exposure limits for the substances in this mixture.

DNEL		Routes of exposure	Exposure frequency:	Remarks:
Worker	Consumer			
n.d.	n.d.	Dermal	Short term (acute) Long term (repeated)	n.d.
n.d.	n.d.	Inhale	Short term (acute) Long term (repeated)	n.d.
n.d.	n.d.	Oral	Short term (acute) Long term (repeated)	n.d.

PNEC			Exposure frequency:	Remarks:
Water	Soil	Air		
n.d.	n.d.	n.d.	Short term (single use) Long term (continuous)	n.d.
n.d.	n.d.	n.d.	Short term (single use) Long term (continuous)	n.d.
n.d.	n.d.	n.d.	Short term (single use) Long term (continuous)	n.d.

- 8.2. Exposure controls:  
In case of a hazardous material with no controlled concentration limit it is the employer’s duty to keep concentration levels down to a minimum achievable by existing scientific and technological means, where the hazardous substance poses no harm to workers.
- 8.2.1 Appropriate engineering controls:  
In pursuance of work is proper foresight needed to avoid spilling onto clothes and floors and to avoid contact with eyes and skin (wearing safety glasses is recommended).

When using do not eat, drink or smoke.

Use under the conditions specified and with adequate ventilation.

8.2.2. Individual protection measures, such as personal protective equipment:

1. Eye/face protection: not necessary.
2. Skin protection:
  - a. Hand protection: not necessary.
  - b. Other: not necessary.
3. Respiratory protection: approved dust mask if permissible exposure levels are exceeded.
4. Thermal hazard: none known.

8.2.3. Environmental exposure controls: No special procedures recommended.

**The requirements detailed in Section 8 assume skilled work under normal conditions and usage of the product for appropriate aims. If conditions differ from normal or work is carried out under extreme conditions an expert's advice should be sought out before deciding upon further protective measures.**

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES:

9.1. Information on basic physical and chemical properties:

Parameter	Test method:	Remarks:
1. <b>Appearance:</b>		off-white / coloured powder /granules
2. <b>Odour:</b>		odourless
3. Odour threshold:		no data available
4. pH value:		no data available
5. Melting point/ freezing point:		no data available
6. Initial boiling point/boiling range:		no data available
7. Flash point:		no data available
8. Evaporation rate:		no data available
9. Flammability:		no data available
10. Upper/lower flammability or explosive limits:		no data available
11. Vapour pressure:		no data available
12. Relative density:		no data available
13. Solubility(ies):		insoluble in water and solvent
14. Partition coefficient: n-octanol/water:		no data available
15. Self-ignition temperature:		no data available
16. Degradation temperature:		no data available
17. Viscosity:		no data available
18. Explosive properties:		no data available
19. Oxidizing properties:		no data available

9.2. Other information:

Specific gravity: 4.2

Refraction index :1.93

Chemical formula:  $\text{TiO}_2\text{-BaO-SiO}_2$

## SECTION 10. STABILITY AND REACTIVITY

10.1. Reactivity: None known.

10.2. Chemical stability:

Stable at normal temperature and under normal conditions.

10.3. Possibility of hazardous reactions:

None known.

10.4. Conditions to avoid:

None known.

10.5. Incompatible materials:

Incompatible with hydrofluoric, fluorosilicic and phosphoric acids and hot strong alkaline solutions.

10.6. Hazardous decomposition products:

None known.

## SECTION 11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects:

Acute toxicity: none known.

Skin corrosion/irritation: none known.

Serious eye damage/irritation: none known.

Respiratory or skin sensitisation: none known.

Germ cell mutagenicity: none known.

Carcinogenicity: Not Listed by OSHA, NTP or IARC.

Reproductive toxicity: none known.

STOT-single exposure: none known.

STOT-repeated exposure: none known.

Aspiration hazard: none known.

11.1.1. For substances subject to registration, brief summaries of the information derived from the test conducted:

No data available.

- 11.1.2. Relevant toxicological properties of the hazardous substances:  
No data available.
- 11.1.3. Information on likely routes of exposure: Routes of entry: inhalation.
- 11.1.4. Symptoms related to the physical, chemical and toxicological characteristics:  
**Acute effects:**  
Ingestion: no data available.  
Inhalation: Repeated or prolonged inhalation of dust in excess of permissible exposure limits may result in irritation to the respiratory tract.  
Skin contact: no data available.  
Eye contact: no data available.  
**Irritation:** Irritation of eyes and respiratory tract may be possible.  
**Sensitization:** sensitizing effects not known.  
**Other health effects:** Chronic respiratory conditions may be aggravated by exposure to high concentrations of dust.
- 11.1.5. Delayed and immediate effects as well as chronic effects from short and long-term exposure: No data available.
- 11.1.6. Interactive effects:  
No data available.
- 11.1.7. Absence of specific data: No information.
- 11.1.8. Other information:  
No data available.

## SECTION 12. ECOLOGICAL INFORMATION

- 12.1. Toxicity:  
Do not discharge into surface water, drains, sewers or soil.
- 12.2. Persistence and degradability:  
No data available.
- 12.3. Bioaccumulation potential:  
No data available.
- 12.4. Mobility in soil:  
No data available.
- 12.5. Results of PBT and vPvB assessment: No data available.
- 12.6. Other adverse effects:  
No data available.

## SECTION 13. DISPOSAL CONSIDERATIONS

- 13.1. Waste treatment methods:  
Disposal according to the local regulations.
- 13.1.1. Information regarding the disposal of the product:  
The manufacturer has not provided specific instructions concerning the method of disposal.  
Handle and dispose of waste in accordance with national and local regulations.  
European waste code: The waste code depends on the application of the product; therefore, must be determined by the user. The allocation of a waste code number according to the European Waste Catalogue (EWC) should be carried out in agreement with the regional waste disposal company.
- 13.1.2. Information regarding the disposal of the packaging:  
Dispose of packaging as specified for the product.
- 13.1.3. Physical/chemical properties that may affect waste treatment options shall be specified: None known.
- 13.1.4. Sewage disposal:  
None known.
- 13.1.5. Special precautions for any recommended waste treatment: No data available.

## SECTION 14. TRANSPORT INFORMATION

**Not dangerous good in sense of the transport regulations.**

- 14.1. UN Number:  
n.d.
- 14.2. UN proper shipping name:  
n.d.
- 14.3. Transport hazard class(es):  
n.d.
- 14.4. Packaging group:  
n.d.
- 14.5. Environmental hazard:n.d.
- 14.6. Special precautions for user:  
No information.
- 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code.

## SECTION 15. REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture:  
REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 Concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC

COMMISSION REGULATION (EC) No 790/2009 of 10 August 2009 amending, for the purposes of its adaptation to technical and scientific progress, Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, packaging of substances and mixtures.

DIRECTIVE 1999/45/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 31 May 1999 concerning the Approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006

COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

15.2 Chemical safety assessment: no information available.

## SECTION 16. OTHER INFORMATION

Information regarding the revision of the safety data sheet:

This safety data sheet has been updated according to Annex I of Regulation 453/2010/EU (Section 1-16).

No amendments have been made in the hazard classification compared to the previous version.

The classification of the components and the mixture have been amended according to Regulation 1272/2008/EC (CLP) and its Amendments.

Full text of the abbreviations in the safety data sheet:

DNEL: Derived no effect level, PNEC: Predicted no effect concentration. CMR effects: Carcinogenicity, Mutagenicity and reproduction toxicity. PBT: Persistent, bioaccumulative and toxic. vPvB: very persistent and very bioaccumulative. n.d: not defined. n.a: not applicable.

Data sources: n.d.

Relevant R-Phrases (number and full text) of Section 2 and 3: none

Relevant R-Phrases (number and full text) of Section 2 and 3: none

Training instructions: n.d.

This safety data sheet had been prepared on the basis of information provided by the manufacturer / supplier and conform to the relevant regulations. The information. The SDS shall be used only as a guide for handling the product, in the course of handling and using the product other considerations may arise or be required. Users are cautioned to determine the appropriateness and applicability of the above information to their particular circumstances and purposes and assume all risk associated with the use of this product. It is the responsibility of the user to fully comply with local, national and international regulations concerning the use of this product.