

SAFETY DATA SHEET

Modified: 06.10.2017

Date of the replaced document: 15.07.2016
Revision no 1; Version 2.0

According to the regulations (EU) no.1907/2006 and (EU) 2015/830.

NB: This mixture is not classified as hazardous under the CLP regulation, but a REACH regulation compliant safety data sheet has been drawn up insofar as its submission may be required at the request of the supplier according to the following requirement set out in the REACH regulation:

“The supplier shall provide the recipient at his request with a safety data sheet compiled in accordance with Annex II, where the mixture does not meet the criteria for classification as hazardous in accordance with Titles I and II of Regulation (EC) No 1272/2008 but contains: in an individual concentration of ≥ 1 % by weight for non-gaseous mixture at least one substance posing human health or environmental hazards.” This requirement applies to this mixture as it contains up to 1% of a hazardous substance, potassium sorbate (see section 3 for more detail).

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/ MIXTURE AND OF THE COMPANY/ UNDERTAKING

1.1. Product Identifier

Commercial name: FLYlux agent to increase balloons flying time

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

Relevant identified uses: The liquid-plastic agent creates a helium-retaining membrane on the inner surface of the balloon, which extends the fly-time of the latex balloons after helium filling (for several weeks).

Suitable for use by the consumer and professional. The sector of use is rubber and plastic products (SU11, SU12); the product category is coatings and preparations containing polymers (PC9a, PC32); the process category is the application of substances and hand-held operations (PROC 10; PROC 19).

Uses advised against: none.

1.3. Details of the supplier of the safety data sheet Manufacturer:

“INNOVATIVE TECHNOLOGIES“ LLC

ITN 6685112793 \ IEC 667001001 PSRN 1169658054642 Address:
51 Malyshev St., of. 20.05, Ekaterinburg. Russia Phone: +7-343-318-
2788

E-mail address of the competent person responsible for the safety data sheet: in-tekhno@mail.ru

Supplier:

Fly Luxe Production OÜ

Address: Kibuvitsa 3-1, Tabasalu alevik, Harku vald, Harju maakond, 76901

Phone: +79826637753

E-mail address of the competent person responsible for the safety data sheet: in-tekhno@mail.ru

1.4. Emergency Telephone Number

Emergency Centre: **112**

Poisoning Information Centre telephone number: 16662 (M: 09.00-21.00; Tu-Su: 24/7); Calling abroad (+372) 7943 794

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP): The mixture is not classified as hazardous under the CLP criteria.

However, this safety data sheet is provided on request, as the mixture contains up to 1% of one substance classified as hazardous to health.

2.2. Label elements

There are no label elements under the CLP Regulation, since the mixture is not classified as dangerous under this Regulation.

Additional information on the label

It is advisable to include on the label information that the mixture contains up to 1% in-can preservative potassium sorbate to maintain the product.

2.3. Other hazards

Ingredients in this product do not full fil the PBT and vPvB criteria in accordance with Annex XIII of Regulation (EC) 1907/2006.

SECTION 3: COMPOSITION/ INFORMATION ON INGREDIENTS

3.1. Substance

Not applicable.

3.2. Mixture

Description of the mixture: A water-based mixture containing a PVP / VA copolymer and an incan preservative for the preservation of the product itself and other ingredients that are not classified as hazardous under the CLP regulation.

Hazardous components

| CAS no / EÜ no | REACH reg.no | Ingredient name | concentration, mass-% | Classification (EU)1272/2008 |
|--|--|--|-----------------------|------------------------------|
| 590-00-1, 24634-61-5 / 246-376-1 | Not applicable (tonnage below 1 t/y) | Potassium-(E,E)-hexa- 2,4-dienoate (Potassium sorbate) | ≤ 1% | Eye Irrit.2; H319 |

Other main components

| CAS no / EÜ no | REACH reg.no | Ingredient name | concentration, mass-% | Classification (EU)1272/2008 |
|---------------------------|----------------------|--|-----------------------|------------------------------|
| 25086-89-9 / 607-540-1 | Polymer | Vinylpyrrolidone/vinyl acetate copolymer; PVP/VA copolymer | 40-50% | Not applicable |
| 7732-18-5 / 231-791-2 | Natural substance | Water | 40-50% | Not applicable |

Note: PVP / VA copolymer may contain traces of unreacted monomer vinyl acetate to which an occupational exposure limit has been set.

Additional information:

For full text of hazard statements (H statements) and hazard classes and categories, see: section 16.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures General note:

The mixture is not classified as hazardous, but in the case of unintended exposure / accident, it may be necessary to take certain conventional measures. In case of suspicion or in case of illness contact a poison control centre or doctor (show the label if possible). **Following inhalation:**

Remove person to fresh air. **Following skin contact:**

IF ON SKIN (or hair): Remove excess product with a napkin or similar item, rinse with plenty of running water. Wash contaminated clothing if necessary. **Following eye contact:**

IF IN EYES: Rinse eye / eyes immediately with eyelids open with plenty of water. Avoid getting rinsing water into another eye. Remove contact lenses if used and easy to remove. **Following ingestion:**

Rinse mouth with water. Drink 1-2 glasses of water to dilute the chemical, use activated charcoal.

4.2. Most important symptoms and effects, both acute and delayed

May cause irritation to the respiratory system and skin. May cause redness of the eyes, watery eyes. Ingestion may result in nausea, gastrointestinal disturbances.

4.3. Indication of any unavoidable medical attention and special treatment needed

There is generally no need. In case of splashing into eyes, immediately flush eyes with water.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media:

5.1. Suitable extinguishing media: The mixture is not combustible or explosive. Use spray water, powder or foam extinguisher.

5.2. Unsuitable extinguishing media: Not known.

5.3. Special hazards arising from the substance or mixture: In the event of fire, some vinyl acetate copolymers, carbon oxides, incomplete combustion products of carbon compounds and hydrocarbon vapours may be released after evaporation of water. Thermal decomposition products are toxic.

5.4. Advice for firefighters: Depending on the size of the fire, wear suitable protective clothing and self-contained breathing apparatus if necessary.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures: Personnel / emergency responders:

In case of major leakage - prevent unauthorized persons from access to storage, handling and spill areas. Avoid contact with the mixture. Wear suitable protective clothing - see section 8. Ensure adequate ventilation. Use the precautionary measures to eliminate sources of leak if possible.

6.2. Environmental precautions:

No special environmental protection measures. Avoid entering large quantities in the drainage system and in the soil. Localize and clean the pollution zone.

6.3. Methods and material for containment and cleaning up:

Containment:

In case of large quantities: Avoid unintended spillage into sewage system by covering the drains.

Localize the pollution zone -surround the spilled product, for example, with a soil wall. **Cleaning:**

Large quantities of the spilled mixture should be absorbed into an inert material (e.g. sand, sawdust, universal binding materials), stored in an appropriately labelled and sealed container. For disposal advice, see Section 13. Wash the surface with water. Small amounts can be rinsed off with plenty of water.

6.4. Reference to other sections:

See section 8.2 for personal protective equipment and section 13 for disposal considerations 3.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling:

Recommendations for safe handling:

Do not handle before considering and understanding the safety requirements. Use appropriate personal protective equipment (see section 8). Wash contaminated protective equipment before reuse. Avoid inhalation of vapours and eye, skin contact with the chemical. **General occupational hygiene:**

Do not eat, drink or smoke in work areas; wash hands after use and remove contaminated clothing before entering eating areas. It is not recommended to wear contact lenses while working with the product.

7.2. Conditions for safe storage, including any incompatibilities:

Technical measures and storage conditions:

Store in tightly closed original packaging, protected from direct sunlight, in a dry and well-ventilated place. Keep away from unsuitable materials (acids, bases), food and drink. Insure storage temperature over 0 C and relative humidity of 30-90%. Make sure there is an eye-wash possibility close to the work area. **Packaging materials:**

The mixture is transported in hermetically sealed bottles up to 4.0 litres. The container may be equipped with a dosing pump. Mixture containers are packed in wooden boxes or corrugated cardboards intended for household chemical products. Other types of packaging may be used if safe handling of the mixture during the shelf-life can be ensured.

7.3. Specific use:

Not applicable.

SECTION 8: EXPOSURE CONTROLS/ PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limit values

Not assigned in EU to the mixture nor to its main component PVP / VA copolymer. However, the copolymer may contain traces of unreacted monomer vinyl acetate, which has an occupational exposure limit in the EU, including in Estonia: 5ppm and 10ppm, respectively, for long-term and short-term ceilings.

DNEL/DMEL values

Potassium sorbate:

| Route of exposure | Workers | | | | Consumers | | | |
|-------------------|----------------------|------------------------|-----------------------|--------------------------|----------------------|-------------------------|-----------------------|--------------------------|
| | Acute effect local | Acute effects systemic | Chronic effects local | Chronic effects systemic | Acute effect local | Acute effects systemic | Chronic effects local | Chronic effects systemic |
| Oral | Not required | | | | no hazard identified | | | 2 mg/kg bw/day |
| Inhalation | | | | 17,63 mg/m ³ | no hazard identified | 26.08mg/m ³ | | |
| Dermal | no hazard identified | | | 40 mg/kg bw/day | | 0.17 mg/cm ² | no hazard identified | 52,17 mg/m ³ |

Each of the cells should contain one of the following information: i) DNEL value with unit or ii) hazard identified but no DNEL available or iii) no exposure expected, iv) no hazard identified

Environmental exposure: PNEC values

| | Ingredient |
|-----------------------|-------------------------|
| Environment | Potassium sorbate, PNEC |
| | 1 mg/l |
| Fresh water | 0,1 mg/l |
| Marine water | 3.6 mg/kg sediment dw |
| Fresh water sediment | 0.36 mg/kg sediment dw |
| Marine water sediment | 1.67 mg/kg soil dw |
| Soil | 10 mg/l |
| STP | Not applicable |
| Air | |

VPV / VA copolymer:





This is a polymer, REACH registration not required; chemical safety assessment has not been carried out, DNEL / DMEL and PNEC have not been determined.

8.2. Exposure controls

Appropriate engineering controls:

No specific technical controls are required for normal use. Avoid contact with skin, eyes, clothing. Ensure that there is an opportunity to rinse eyes if necessary. Wash hands after work. Continuous long-term work with the product or in case of high-risk handling: use adequate ventilation, or carry out work in the open air. Wash contaminated clothing before re-use. Personal protective equipment should be selected according to working conditions. Ensure that eyewash opportunity is available if necessary.

Individual protection measures, such as personal protective equipment:

| | |
|---|---|
| Eye/ face protection:  | It is recommended to use safety glasses. It cannot be ruled out that the balloon may burst during handling and cause splashing of the undried mixture. The close-fitting goggles EN 166 are required for professional use. Ensure that eyewash opportunity is available if necessary. |
| Skin protection:  | There are no specific conditions for consumer use. For continuous, long-term work with a product or at high risk, choose skin protection measures based on the activity and potential effects, such as wearing protective clothing, rubber apron. |
| Respiratory protection:  | Ensure adequate ventilation. In general, personal respiratory protective equipment is not required. Continuous prolonged exposure to the product or working under high risk of exposure, use respirator with mist / aerosol filter. |
| Hand protection:  | Continuously working with product or during high-risk handling, use chemical protection gloves EN 374. Gloves that have changes in appearance should be replaced immediately. |

Environmental exposure controls:

Avoid contact with soil and water. Avoid uncontrolled discharge of product into sewers and surface water.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES
9.1. Information on basic physical and chemical properties

| | |
|--|---|
| Appearance | Clear liquid gel without lumps. Transparent. |
| Odour | Not determined |
| pH | 6,5-7,5 |
| Melting point/ freezing point | / Below 0 °C |
| Initial boiling point and boiling range | Not determined |
| Flash Point | Not determined |
| Evaporation rate | Not determined |
| Auto-ignition temperature | Not determined |
| Upper/ lower flammability or explosive limits | Not determined |
| Vapour pressure | Not determined |
| Vapour density | Not determined |
| Density | 0,9 g/cm³ (20 °C); |
| Solubility | Soluble in water (and other polar solvents) |

| | |
|--|--|
| Partition coefficient: noctanol/water | Not determined |
| Decomposition temperature | Not applicable |
| Viscosity | 40 mPa s 20 °C; |
| Explosive properties | Not explosive (may include trace amount of monomer VA) |
| Oxidising properties | Not oxidizing |

9.2. Other information

Mass fraction of solids % not less than 19%. Curing time 5-10 min.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity: stable under normal storage conditions.

10.2 Chemical stability: stable under normal conditions; dissolved in water; does not freeze at temperature below 0 °C; after thawing retains its properties.

10.3 Possibility of hazardous reactions: not known.

10.4 Conditions to avoid: avoid excessive heat.

10.5 Incompatible materials: acids and bases.

10.6 Hazardous decomposition products: none, when used as specified.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

The mixture as a whole has not been tested - the following data characterizes the ingredients of the mixture.

Hazard classes: Acute toxicity:

There are no experimental data for the mixture. On the basis of the available data, the classification criteria are not met.

Potassium sorbate is not classified as acutely toxic.

The European Food Safety Authority (EFSA) has evaluated PVP / VA copolymer and it has been approved for use as a food additive. The copolymer is not classified as acutely toxic.

Skin corrosion / irritation: There are no experimental data for the mixture; On the basis of the available data, the classification criteria are not met.

Serious eye damage / irritation: There are no experimental data for the mixture; On the basis of the available data, the classification criteria are not met. Mixture contains only up to 1 % irritating ingredient.

Respiratory or skin sensitisation: There are no experimental data for the mixture; On the basis of the available data, the classification criteria are not met.

| Hazard class; exposure route | Ingredient | Results | Effect Dose (Value) | Species | Method | Exposure |
|------------------------------|-------------------|--|---------------------|---------|----------------------------|----------|
| Skin corrosion / irritation | Potassium sorbate | Score "zero" for all animals after 24h. Does not cause skin corrosion / irritation | 3333 mg/ml | Rabbit | EU Method B.4 and OECD 404 | 4h |

| | | | | | | |
|-----------------------------------|--------------------|---|--|------------|---|-----|
| | PVP / VA copolymer | On the basis of the available data, the classification criteria are not met | | | | |
| Serious eye damage / irritation | Potassium sorbate | Causes eye irritation | 100 mg per eye; Fully reversible in 21 days | Rabbit | EU Method B.5 and OECD 405 | 4h |
| | PVP / VA copolymer | On the basis of the available data, the classification criteria are not met | | | | |
| Respiratory or skin sensitisation | Potassium sorbate | Does not cause sensitization | 0,1% and 1% | Guinea pig | EU Method B.6 (data extrapolation: sorbic acid) | 24h |
| | PVP / VA copolymer | On the basis of the available data, the classification criteria are not met | | | | |

Mutagenicity: There are no experimental data for the mixture; On the basis of the available data, the classification criteria are not met.

EFSA's assessment of the PVP / VA copolymer and its monomers suggests that genotoxic effects are negligible.

Carcinogenicity: There are no experimental data for the mixture; On the basis of the available data, the classification criteria are not met.

Based on the very low content of the residual monomers, it can be assumed that the copolymer does not cause carcinogenic effects. (EFSA assessment)

| Hazard class; exposure route | Ingredient | Results | Effect Dose (Value) | Species | Method | Exposure |
|------------------------------|--------------------|--|---|-----------|------------------------|--------------------|
| Carcinogenicity (oral) | PVP / VA copolymer | On the basis of the available data, the classification criteria are not met. | NOAEL 2800 mg/kg bw/d; / NOAEL 2500 mg/kg bw/d | Rat / Dog | OECD 451 / OECD 452 | 2 years / 52 weeks |

Reproductive toxicity: There are no experimental data for the mixture; On the basis of the available data, the classification criteria are not met.

There are no reproductive or developmental toxicity data available for PVP/VA copolymer. The copolymer is not expected to have reproductive or developmental effects considering the low oral bioavailability of PVP/VA copolymer and given the presence of only very low levels (<5 mg/kg) of residual monomers (VP and VA) in the copolymer. In support of this, it has been noted that a similar polymer produced from VA, (i.e. polyvinyl alcohol) did not show reproductive or developmental effects at doses up to 5000 mg/kg bw/day. (EFSA assessment)

STOT- single exposure: There are no experimental data for the mixture; On the basis of the available data, the classification criteria are not met.

STOT – repeated exposure: There are no experimental data for the mixture; On the basis of the available data, the classification criteria are not met.

Aspiration hazard: No data available.

| Hazard class; exposure route | Ingredient | Results | Effect Dose (Value) | Species | Method | Exposure |
|------------------------------|--------------------|--|---|--------------|------------------------|----------------------|
| STOT - repeated exposure | PVP / VA copolymer | On the basis of the available data, the classification criteria are not met. | NOAEL 1000 mg/kg bw/d; / NOAEL 1000 mg/kg bw/d | Rat / Rat | OECD (EFSA assessment) | 28 days / 90 days |

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Acute (short-term) toxicity (data on ingredients):

The mixture has not been tested, but according to the available data on ingredients, the classification criteria for acute toxicity to the aquatic environment are not met.

| Hazard class; exposure route | Ingredient | Results | Effect Dose (Value) | Species | Method | Exposure |
|---|-------------------|--|------------------------------|-------------------------|----------|----------|
| Acute toxicity to fish | Potassium sorbate | On the basis of the available data, the classification criteria are not met. | LC50 = 500 mg/L | Danio rerio | OECD 203 | 96h |
| Acute toxicity to aquatic invertebrates | | | EC50 = 982 mg/l | Daphnia magna | OECD 202 | 48h |
| Acute toxicity to algae | | | ErC50 480 mg/L; NOEC 97 mg/L | Scenedesmus subspicatus | OECD 201 | 48h |

Chronic (long-term) toxicity:

The mixture has not been tested, but according to the available data on ingredients, the classification criteria for chronic toxicity to the aquatic environment are not met.

12.2. Persistence and degradability

Potassium sorbate is dissociated by a reversible reaction with water under environmental conditions. The sorbate anion is the relevant part for the degradation of the active substance in water. Therefore, tests with sorbic acid can be used to determine the biodegradability of potassium sorbate. The biodegradation rate for sorbic acid amounts up to > 60 % within the 28 day period and the 10-day window (based on oxygen demand according to OECD 301D and EU Method C.4-E). Sorbic acid and consequently potassium sorbate can be classified as “readily biodegradable”.

12.3. Bioaccumulation potential

Potassium sorbate: Based on the low bioconcentration factor of sorbic acid (BCF = 0.007, pH 6.5), potassium sorbate may be expected to have a low bioaccumulation potential as well.

Vinyl pyrrolidone / vinyl acetate copolymer: There is no information available on bioaccumulation but bioaccumulation is not expected based on the components of it. **12.4. Mobility in soil** Soluble in water. Is mobile.

12.5. Results of PBT and vPvB assessment

Ingredients of the mixture (and thus also the mixture as a whole) do not meet the PBT and vPvB criteria.

12.6 Other adverse effects No data available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods:

Specific waste management methods are not required. Use the product to the end - no waste will be generated if used as intended. Dispose of waste according to the applicable national and regional regulations. Small amounts can be diluted with plenty of water and flush away.

The undiluted mixture shall be handed over to an authorized waste disposal company. It won't be considered hazardous waste.

Packaging Waste: Well-washed packaging is a household waste and is to be recycled.

SECTION 14: TRANSPORT INFORMATION

The mixture does not classify as dangerous goods in respect of transport requirements and the following paragraphs are not applicable.

14.1. UN number: - **14.2. UN proper shipping name**

- **14.3.**

Transport hazard class (es): -

14.4. Packing group: - **14.5. Environmental hazards:** -

14.6. Special precautions for user: -

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code: -

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

1907/2006 EU; 528/2012 EU and 1272/2008 EU **National (Estonian) regulations:**

The Chemicals Act and the implementing legislation established on the basis thereof; the Waste Act and the implementing legislation established on the basis thereof; the Occupational Health and Safety Act and the implementing legislation established on the basis thereof. **Authorisations and/or**

restrictions on use:

The ingredients of this mixture are not subject to authorisation or restriction under REACH.

15.2. Chemical safety assessment

The chemical safety of the mixture has not been assessed in accordance with the REACH Regulation.

The Chemical Safety Assessment has been carried out on a hazardous ingredient in the mixture: potassium sorbate.

SECTION 16: OTHER INFORMATION

16.1. Indication of changes:

Changes are large scale. The entire Safety Data Sheet has been brought into compliance with the requirements of EC Regulation No. 1907/2006 - The original version was based on the Russian Chemical Regulations and was not in compliance with EU requirements.

16.2. Abbreviations and acronyms:

DNEL – derived no effect level

ECHA – European Chemical Agency

EFSA – European Food Safety Authority

PBT – Persistent, Bioaccumulative and Toxic

PC – product category

PNEC – predicted no effect concentration

PROC – process category SU

– sector of use vPvB – very persistent and very bioaccumulative

16.3. Key literature references and sources for data:

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008.

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 (Annex II).

Commission Regulation (EU) No 453/ 2010 of 20 May 2010.

Regulation (EC) No 528/2012 of the European Parliament and of the Council on Biocidal products (BPR)

The European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), Volume 1, United Nations, New York and Geneva, 2010.

Regulation of the Government of Estonia from 18 September 2001 no 293 “Occupational exposure limit values “.

Guidance on the compilation of safety data sheets. Version 3.1, ECHA (European Chemicals Agency), 2015.

Guidance on the Application of the CLP Criteria. Version 5.0, ECHA, July 2017.

EFSA Scientific Opinion on the safety of polyvinylpyrrolidone-vinyl acetate copolymer for the proposed uses as a food additive. <https://www.efsa.europa.eu/fr/efsajournal/pub/1948>
<http://osha.europa.eu/en/topics/ds/oel/index.stm/members.stm>

International database for exposure limits GESTIS

ECHA databases

Raw material SDS and other technical datasheets.

16.4. Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

The mixture does not classify as hazardous according to CLP regulation.

The mixture has been assessed against the classification criteria based on its ingredients according to summation method. In addition, expert judgement and the weight of evidence approach has been used.

16.5. Relevant H-statements (number and full text):

| Code | Hazard class and category | Code – Hazard statement |
|--------------|---|---------------------------------------|
| Eye Irrit. 2 | Serious eye damage/eye irritation, category 2 | H319 – Causes serious eye irritation. |

16.6. Further information:

Distribution of the hazard datasheet:

Information in this document shall be made available on request to all who may become in contact with the mixture described herein.