



Safety data Sheet
UV dye for 1234yf: 11.005YF_11.060YF
ELKE S.r.l.
VIA GRAZIA DELEDDA 72 10060 CANDIOLO (TO) ITALIA
REA di TO: 987683 P.Iva 08613670010
Tel. n.. +39 011 9622412 Fax n. +39 011 9625620

Safety Data Sheet dated 20/9/2011, version 1

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

1.1 Product Identifier

Mixture identification:
Trade name: UV dye for 1234yf
Trade code: 11.005YF_11.060YF

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

1.3 Details of the supplier of the safety data sheet

Company:
ELKE S.r.l. VIA GRAZIA DELEDDA 72 10060 CANDIOLO (TO) Italia.
ELKE S.r.l. Tel. n.. +39 011 9622412 Fax n. +39 011 9625620

Competent person responsible for the safety data sheet:

Domenico Amosso info@elke-ac.com

1.4 Emergency telephone number

Poisons Department, Niguarda Hospital, Milan -Italy Tel +39 02 66101029

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Directive criteria, 67/548/CE, 99/45/EC and following amendments thereof:

No specific hazards are encountered under normal product use.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synthetic oil > 95%
Additives < 5%

3.2 Mixtures

Hazardous components within the meaning of EEC directive 67/548 and CLP regulation and corresponding classification:

None.

4. FIRST AID MEASURES

4.1 Description of first aid measures

In case of skin contact:

Wash with plenty of water and soap.

In case of eyes contact:

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

In case of Ingestion:

Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.

In case of Inhalation:

Remove casualty to fresh air and keep warm and at rest.

4.2 Most important symptoms and effects, both acute and delayed

None

4.3 Indication of any immediate medical attention and special treatment needed

Treatment:

None

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media:

Water.

Carbon dioxide (CO₂).

Extinguishing media which must not be used for safety reasons:

None in particular.

5.2 Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

5.3 Advice for fire-fighters

Use suitable breathing apparatus .

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Move undamaged containers from immediate hazard area if it can be done safely.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.

Remove persons to safety.



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See protective measures under point 7 and 8.

6.2 Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

Retain contaminated washing water and dispose it.

In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

Suitable material for taking up: absorbing material, organic, sand

6.3 Methods and material for containment and cleaning up

Wash with plenty of water.

6.4 Reference to other sections

See also section 8 and 13

7. HANDLING AND STORAGE

7.1 Precautions for safe handling:

Avoid contact with skin and eyes, inhalation of vapours and mists.

Do not eat or drink while working.

See also section 8 for recommended protective equipment.

7.2 Conditions for safe storage, including any incompatibilities

Keep away from food, drink and feed.

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Adequately ventilated premises.

7.3 Specific end use(s)

None in particular

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

None.

8.2 Exposure controls

Eye protection:

Not needed for normal use. Anyway, operate according good working practices.

Protection for skin:

No special precaution must be adopted for normal use.

Protection for hands:

Not needed for normal use.

Respiratory protection:

Not needed for normal use.

Thermal Hazards:

None

Environmental exposure controls:

None

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

| | |
|---|-----------------------|
| Appearance and colour: | Yellow liquid |
| Odour: | characteristic |
| Odour threshold: | N.A. |
| pH: | N.A. |
| Melting point / freezing point: | N.A. |
| Initial boiling point and boiling range: | N.A. |
| Solid/gas flammability: | N.A. |
| Upper/lower flammability or explosive limits: | N.A. |
| Vapour density: | > 1 |
| Flash point (C.O.C.)°C: (ASTM D92) | >150 |
| Evaporation rate: | N.A. |
| Vapour pressure: | N.A. |
| Relative density 15°C: (ASTM D1298) | 0,98 kg/l |
| Solubility in water: | insoluble |
| Lipid solubility: | insoluble |
| Partition coefficient (n-octanol/water): | N.A. |
| Auto-ignition temperature: | N.A. |
| Decomposition temperature: | N.A. |
| Viscosity 40° CcSt: (ASTM D 445) | 46 mm ² /s |
| Explosive properties: | N.A. |
| Oxidizing properties: | N.A. |

9.2 Other information

Miscibility: N.A.



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| | |
|--------------------------------------|------|
| Fat Solubility: | N.A. |
| Conductivity: | N.A. |
| Substance Groups relevant properties | N.A. |

10. STABILITY AND REACTIVITY

- 10.1 Reactivity
 - Stable under normal conditions
- 10.2 Chemical stability
 - Stable under normal conditions
- 10.3 Possibility of hazardous reactions
 - None
- 10.4 Conditions to avoid:
 - Stable under normal conditions.
- 10.5 Incompatible materials:
 - None in particular.
- 10.6 Hazardous decomposition products:
 - None.

11. TOXICOLOGICAL INFORMATION

- 11.1 Information on toxicological effects
 - There is no toxicological data available on the mixture. Consider the individual concentration of each component to assess toxicological effects resulting from exposure to the mixture.
- Toxicological information on main components of the mixture:

The product does not contain toxicologically relevant substances.

12. ECOLOGICAL INFORMATION

- 12.1 Toxicity
 - Adopt good working practices, so that the product is not released into the environment.
- 12.2 Persistence and degradability
 - None
- 12.3 Bioaccumulative potential
 - N.A.
- 12.4 Mobility in soil
 - N.A.
- 12.5 Results of PBT and vPvB assessment
 - List of substances dangerous for the environment and corresponding classification:
 - None
- 12.6 Other adverse effects
 - None

13. DISPOSAL CONSIDERATIONS

- 13.1 Waste treatment methods
 - Recover if possible. In so doing, comply with the local and national regulations currently in force.

14. TRANSPORT INFORMATION

- 14.1 UN number:
- 14.2 UN proper shipping name:
 - N.A.
- 14.3 Transport hazard class(es):

| | |
|-------------|---------------|
| ADR-Class: | Not dangerous |
| IATA-Class: | Not dangerous |
| IMDG-Class: | Not dangerous |
| N.A. | |
- 14.4 Packing Group:
 - N.A.
- 14.5 Environmental hazards
 - N.A.
- 14.6 Special Precautions for User
 - N.A.
- 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
 - Environmental Pollutant:
 - No

15. REGULATORY INFORMATION

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
 - Dir. 67/548/EEC (Classification, packaging and labelling of dangerous substances). Dir. 99/45/EEC (Classification, packaging and labelling of dangerous preparations). Dir. 98/24/EC (Risks related to chemical agents at work). Dir. 2000/39/EC



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(Occupational exposure limit values); Dir. 2006/8/CE. Regulation (CE) n. 1907/2006 (REACH), Regulation (CE) n. 1272/2008 (CLP), Regulation (CE) n. 790/2009 (1° ATP CLP), Regulation (EU) n. 453/2010 (Annex I).

Where applicable, refer to the following regulatory provisions :

Directive 82/501/EEC ('Activities linked to risks of serious accidents') and subsequent amendments.

Regulation (EC) nr 648/2004 (detergents).

15.2 Chemical Safety Assessment

No

16. OTHER INFORMATION

This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

CCNL - Appendix 1

Insert further consulted bibliography

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.

| | |
|-------------|--|
| ADR: | European Agreement concerning the International Carriage of Dangerous Goods by Road. |
| CAS: | Chemical Abstracts Service (division of the American Chemical Society). |
| CLP: | Classification, Labeling, Packaging. |
| DNEL: | Derived No Effect Level. |
| EINECS: | European Inventory of Existing Commercial Chemical Substances. |
| GefStoffVO: | Ordinance on Hazardous Substances, Germany. |
| GHS: | Globally Harmonized System of Classification and Labeling of Chemicals. |
| IATA: | International Air Transport Association. |
| IATA-DGR: | Dangerous Goods Regulation by the "International Air Transport Association" (IATA). |
| ICAO: | International Civil Aviation Organization. |
| ICAO-TI: | Technical Instructions by the "International Civil Aviation Organization" (ICAO). |
| IMDG: | International Maritime Code for Dangerous Goods. |
| INCI: | International Nomenclature of Cosmetic Ingredients. |
| KSt: | Explosion coefficient. |
| LC50: | Lethal concentration, for 50 percent of test population. |
| LD50: | Lethal dose, for 50 percent of test population. |
| PNEC: | Predicted No Effect Concentration. |
| RID: | Regulation Concerning the International Transport of Dangerous Goods by Rail. |
| STEL: | Short Term Exposure limit. |
| STOT: | Specific Target Organ Toxicity. |
| TLV: | Threshold Limiting Value. |
| TWATLV: | Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard). |
| WGK: | German Water Hazard Class. |