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|  | MATERIAL SAFETY DATA SHEET | | Page 1 of 9 |
| Name of the Product: SATELIT 360 SL | Code N° | Revision | Date |
| Registry N°: 01162-PF | HS-7141 | 4 | 16-02-16 |

I.- IDENTIFICATION OF THE MIXTURE AND OF THE COMPANY

1.1 Product identifier: SATELIT 360 SL (Glyphosate 36% w/v SL).

1.2 Relevant identified uses of the mixture and uses advised against: Plant Protection Product: herbicide.

1.3 Details of the supplier of the safety data sheet:

Industrias AFRASA, S.A.
 c/ Ciudad de Sevilla, 53. Tel: 96 132 17 00, Fax: 96 132 17 16,
 46988 Pol. Ind. Fuente del Jarro. Paterna. VALENCIA (ESPAÑA)
www.afrasa.es afrasa@afrasa.es fmonfort@afrasa.es

1.4 Emergency telephone number: National Toxicology Center: +359 2 9154 409.

II.- HAZARDS IDENTIFICATION

2.1 Classification of the mixture:

According to classification rules (UE) of 1272/2008 (CLP): Aquatic chronic. Cat 3.

2.2 Label elements:

According to classification 1272/2008 (CLP):

Pictogram: None.

Signal word: None.

Hazard statements:

H412: Harmful to aquatic life with long lasting effects.

EUH401: To avoid risks to human health and the environment, comply with the instructions for use.

General precautionary Statements:

P102: Keep out of reach of children.

Prevention precautionary statements:

P273: Avoid release to the environment.

Response precautionary statements: None.

Storage precautionary statements: None.


Disposal precautionary statements:

P501: Dispose of contents/ containers in accordance with local regulations.



SP1: DO NOT CONTAMINATE WATER WITH THE PRODUCT OR ITS CONTAINER. (Do not contaminate water by cleaning of equipment near superficial waters / Avoid contamination via farm or road sewage systems.)

Spe3: Untreated buffer zone of 50 m to non-agricultural land must be provided in order to preserve the non-target plants.

2.3 Other hazards: No data available.

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III.- COMPOSITION / INFORMATION ON INGREDIENTS

| DANGEROUS INGREDIENTS | CAS N° | % w/v | CE Classification REGULATION (CE) 1272/2008 [CLP] |
|--|-----------|-------|---|
| GLYPHOSATE ACID N-(PHOSPHONOMETHYL) GLYCINE C₃H₈NO₅P | 1071-83-6 | 36% | Skin irrit. Cat 2, H315; Eye irrit. Cat 1, H318   DANGER |

IV.- FIRST AID MEASURES

4.1 Description of first aid measures:

4.1.1 Inhalation: Remove victim from exposure area to fresh air immediately. If breathing stops, administer artificial respiration. Physician must consider risks if oxygen must be administered. If the victim is in a state of shock, keep at rest and cover with a blanket. Maintain body temperature. Seek medical attention immediately.

4.1.2 Eye contact: Wash eyes thoroughly with water for at least 15 minutes while holding eyelids open. Continue washing with a saline solution until the pH has returned to normal levels. This will take 30-60 minutes. Remove contact lenses, if in use. Cover with a gauze and seek medical attention immediately.

4.1.3 Skin contact: Remove contaminated clothes and laundry. Wash skin thoroughly with water and soap (if there are no burns) for 15-20 minutes. Seek medical attention immediately.

4.1.4 Ingestion: If the product has been ingested, perform gastric lavage depending on the condition of the injured. No antidotes are known. Gastric lavage and oxygen supply must be performed by qualified medical personnel. Do not induce vomiting if product has been swallowed. Maintain airway if vomiting occurs. Do not give anything by mouth. Keep victim at rest. Maintain body temperature.

If victim is unconscious, lay on his/her side with head lower than the rest of the body and knees half-bent.

Take victim to the nearest medical facilities. Show label or container whenever possible.

DO NOT LEAVE VICTIM UNATTENDED.

4.2. Most important symptoms and effects: Irritation of the eyes, skin and mucous membranes. Vomiting, diarrhoea, stomach or chest pain.

4.3 Indication of any immediate medical attention and special treatment needed


Specific treatments: If product has been swallowed, perform gastric lavage, followed by activated charcoal and a sodium bicarbonate solution at 5%. Sodium sulphate as a laxative. Control breathing. Artificial respiration with oxygen if breathing is difficult. Symptomatic treatment.

V.- FIREFIGHTING MEASURES

5.1 Extinguishing media:

Suitable extinguishing media: Carbon Dioxide, dry chemical powder, pulverised water, standard foam. For large fires, use pulverised water, mist or standard foam..

Unsuitable extinguishing media: Water jet.

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5.2. Special hazards arising from the mixture:

Special precautions: Use suitable agents to control the surroundings of the fire. If possible, move containers away from accident area. Is not inflammable or explosive. Do not scatter material with high pressure water streams.

Hazardous fire and explosion products: Toxic Carbon, Nitrogen and Phosphorus Oxides.

5.3 Advice for fire-fighters: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Use agents suitable for surrounding fire control. Move containers away from the stricken area, if possible. Do not scatter spilled material with pressurized water jets.

It is not self-igniting or explosive. Do not scatter spilled material with high pressure water.

Contain water used for fire fighting for later disposal. Prevent aspiration of noxious fumes in case of fire. Avoid breathing harmful vapours in case of fire. Keep upwind of fire. Wear suitable protection clothes to avoid contact with skin. Use gloves and eye-protection.

Special protective equipment for fire fighters: Use appropriate protective equipment to prevent skin contact. Wear gloves and eye protection. See Section VIII for personal protective equipment (PPE) appropriate. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-shield operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

Additional information: Call the Fire Brigade at once to deal with all fires involving pesticides unless the fire is small and immediately controllable. Spray unopened containers with a mist spray to keep cool. If without risk, remove intact containers from exposure to fire. Contain fire-fighting water, bunding if necessary with sand or earth. Do not allow contamination of public drains or surface or ground waters. Dispose of fire debris and contaminated water as advised in the code of practice for using plant protection products.

VI.- ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures: Keep upwind of fire. Avoid breathing sprays, vapours and dust. Do not use contact lenses. Avoid skin contact. Keep unnecessary people away.

6.2 Environmental precautions: Isolate and dyke fire control water to avoid contamination of superficial waters, since product is toxic to aquatic organisms. Collect material in dry, clean containers for later disposal and/or reclamation. Do not touch spilled material. Stop spillage if this can be done without risk. Use water sprays to reduce vapour. For small spillage, place spilled material in clean, dry suitable containers and take away from contaminated area. For large spillages, confine the area and dike spillage for later disposal, away from the contaminated area. Decontaminate all used tools, equipment and cleaning material.

Spill in soil: dig a hole to contain and stop superficial flow. Use sand bags, soil, polyurethane foam or spongy cement to build a dike. Absorb liquid mass with ashes or cement powder.


Spill in water: Use activated charcoal to absorb dissolved spilled substance. Use shovels or mechanical dragging to collect immobilised masses of contaminant and precipitate.

6.3 Methods and material for containment and cleaning up: Collect spilled material using an absorbing material. Wash contaminated area with water and soap. Collect material in dry, clean containers for later disposal and/or reclamation. Do not spill flow into sewage system.

6.4 Reference to other sections: See Section I for emergency contact information, Section VIII for information on appropriate personal protective equipment and Section XIII for waste disposal.

VII.- HANDLING AND STORAGE

7.1 Precautions for safe handling: Avoid contact with eyes, skin or clothes. Do not smoke, eat or drink during handling. After contact with skin: Remove clothes and wash the skin with soap and water. Use adequate protective boots

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and clothes and observe normal precautions for the handling of chemical products or for re-entry after spraying. Keep away from sparks, open flame and excessive heat.

7.2 Conditions for safe storage, including any incompatibilities: Store in tightly closed containers in a cool, dry, well-ventilated area above 0°C.

Do not store together with incompatible materials, strong oxidisers or in conditions of excessive heat. Keep away from open flame and sparks.

Do not eat, drink or smoke in areas which may be contaminated with the product.

7.3 Specific end use(s) Recommendations: Agricultural herbicide for professional use. Use only on labelled crops and dosages. Label instructions must be followed.

VIII.- EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters: There are no exposure limit values established by the OSHA, NIOSH or ACGIH. According to an AOEL study, the use of the following protection equipment controls the danger of the product within acceptable risk levels during handling and application.

8.2 Exposure controls:

- **Control of the professional exposure control:** Risk evaluation.

Respiratory protection:



Respiratory mask. Personal autonomous breathing apparatus in case of accident and during operations of handling/mixing, application, repair and elimination of pesticide. General ventilation system to reduce air concentration level.

Hand protection:



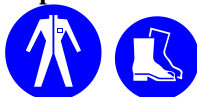
PVC or other plastic gloves.

Eye protection:



Adjustable splash-proof safety goggles or mask which resist dust of chemical products and organic solvents. Avoid using contact lenses.

Skin protection and body:




Appropriate waterproof protective clothing and apron which do not accumulate dust: Long-sleeved overalls with chemical-resistant boots. Change clothes if these are soiled with the product. Wash after handling, especially hands and parts of the body which may have been exposed. Launder clothes separately before reuse. Install safety showers and eye-washing facilities. Do not smoke, eat or drink during handling.

- **Environmental exposure controls:** Do not apply immediately after rain or irrigation, when plants are covered with dew or in very dry conditions or high temperatures. Avoid contamination of water supplies.

- **Environmental risk mitigation measures:** Sprayings on land margins and irrigation facilities must be localized.

SPe3: To protect non-target plants respect an unsprayed buffer zone of 5 meters to non-agricultural land.

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- **Handling risk mitigation measures:** Sprayer must wear suitable protective clothes covering body and legs and gloves during load/mix and application. Moreover, in hand sprayings, clothes and boots must be water resistant. Re-entry is forbidden during 24-hours after spraying. If necessary, wear suitable protection equipment and gloves. For manual spraying should not use containers of 20 liters.

Spo2: Wash all protective clothing after use.

IX.- PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance, physical state, colour: Dense, viscous liquid. Golden-yellow colour.

Odour: Characteristic of the wetting agent.

pH: 4.5-5.2.

Melting point/freezing point: Not applicable.

Initial boiling point and boiling range: ~ 100°C.

Flash point: >61 °C

Evaporation rate: Not available

Flammability (solid, gas): Not flammable.

Upper/lower flammability or explosive limits: No data available

Vapour pressure(25°C): Not applicable.

Vapour density: Not data available.

Relative density(20°C): 1.160 ± 0.005 g/cc

Solubility:

-Hydrosolubility: Soluble in water

-Liposolubility (soluble in oil): Not soluble.

Partition coefficient: n-Octanol/water: K_{ow} Log P = 1.0

Auto_ignition temperature : Not available

Decomposition temperature: Not available

Viscosity: Not available.

Explosive properties: Not explosive. None (based on their ingredients do not have this property).

Oxidizing properties: None (based on their ingredients do not have this property).

9.2 Other information: No data available.

X.- STABILITY AND REACTIVITY

10.1 Reactivity: It does not react dangerously or polymerized.


10.2 Chemical stability: Stable at normal pressure and temperature.

10.3 Possibility of hazardous reactions: None.

10.4 Conditions to Avoid: Avoid strong oxidisers, strongly alkaline or acid conditions. Protect from direct sunlight, excessive heat and ignition sources.

10.5 Incompatible Materials: Strong oxidizers and strong acids and bases

10.6 Hazardous decomposition products: Fire or overheating may result in toxic decomposition gases by decomposition (See section V). Does not present polymerisation reaction hazard in conditions of normal application and use.

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XI.- TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

TOXICOLOGICAL DATA:

| <u>Acute toxicity</u> | <u>GLYPHOSATE</u> | <u>SATELIT 360 SL</u> Glyphosate 36 % w/v SL |
|---|-------------------|---|
| Acute toxicity – ORAL DL ₅₀ mg/kg (rats) | >2000 | >2000 |
| Acute toxicity – DERMAL DL ₅₀ mg/kg (rats) | >2000 | >2000 |
| Acute toxicity – INHALATION CL ₅₀ mg/L 4h. (rats) | 5,1 | >5,85 mg/L air |

11.1.2 Irritation:

| <u>Acute toxicity</u> | <u>GLYPHOSATE</u> | <u>SATELIT 360 SL</u> Glyphosate 36 % w/v SL |
|-----------------------------|-------------------|---|
| IRRITATION OCULAR (RABBITS) | Irritant | Not Irritant |
| SKIN IRRITATION | Irritant | Slightly irritant reversible |

11.1.3 Corrosivity: Not data available.

11.1.4 Sensitisation: Not data available.

11.1.5 Repeated dose toxicity: No data available.

11.1.6 Carcinogenicity: No data available.

11.1.7 Mutagenicity: No data available.

11.1.8 Toxicity for reproduction: No data available.

11.2 Effect on likely routes of exposure:

Inhalation: Exposure may cause irritation of mouth and upper respiratory tract.

Ingestion: Exposure may cause irritation if swallowed.

Skin contact: Exposure may cause a slight reversible irritation to skin.

Eye contact: It may be irritating to eyes.

11.3 Symptoms related to the physical, chemical and toxicological information: Vomiting, diarrhoea, stomach or chest pain.


11.4 Effects chronically delayed and immediate exposure: sensitisation, narcosis, carcinogenicity, mutagenicity, reproductive toxicity (developmental toxicity and fertility).

Immediate: Is not a skin sensitizer

Chronic: NDA

NDA: No Data Available

11.5 Effects Interactive: Not available.

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XII.- ECOLOGICAL INFORMATION

12.1 Toxicity:

Aquatic Toxicity: Harmful to aquatic organisms.

Acute:

Toxicity to Fish: LC₅₀ Oncorhynchus mykiss (96 h) = 18,3 mg/l (Technical Glyphosate)

Toxicity Daphnia: Daphnia magna (48 h.) EC₅₀ = 19,71 mg/l (Technical Glyphosate)

Toxicity Algae and other Aquatic Plants:

EyC₅₀ Pseudokirchneriella subcapitata = 13,32 mg/l

ErC₅₀ Pseudokirchneriella subcapitata = 35,82 mg/l

Chronic:

Toxicity to Fish: NOEC Oncorhynchus mykiss = 4,5 mg/l

Toxicity Daphnia: NOEC Daphnia magna = 6 mg/l.

Toxicity Algae and Other Aquatic plants: NOEC Lemna gibba = 0,5 mg/l; LOEC = 1,5 mg/l.

Toxicity to soil micro and macroorganisms:

Microorganisms: Not available

Macroorganisms: Not available

Toxicity to other important organisms for the environment:

Toxicity birds:

Glyphosate: DL₅₀ Acute (quail) > 3851 mg/kg

CL₅₀ 8-day oral diet (quail) > 4640 mg/kg

Toxicity bees: DL₅₀ (contact and oral) (bees) > 100 µg/bee (Technical Glyphosate)

Toxicity plants: Not available.

12.2 Persistence and degradability: Degradation of glyphosate in soil is microbial. Total degradation >97% within 16 weeks.

12.3 Bioaccumulative potential: Not available. log P_{ow} = 1,0 (Technical Glyphosate)

12.4 Mobility in soil: There is little mobility in soil, as glyphosate is strongly adsorbed by soil.

12.5 Results of PBT and vPvB assessment: This preparation contains no substance considered to be persistent, bioaccumulative and toxic (PBT). This preparation contains no substance considered to be very persistent or bioaccumulative (vPvB).


12.6 Other adverse effects: None.

XIII.- DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods:

Suitable disposal methods of preparation: The product must be eliminated taking into account that it is a dangerous product, both as regards the substance itself and the container. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Procedure for disposal: incinerate this material at a facility that complies with local, regional, and national regulations.

Suitable disposal methods for Packaging: Rinse each container energetically three times and pour the rinsing waters into the sprayer tank.

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When empty, this container is a toxic residue. The user is required to return it to a reception point of the integrated management system for Phytosanitary Packaging, if any, or to the sale point where it was purchased.

XIV.- TRANSPORT INFORMATION

Road Transport (ADR/RID) - Maritime (IMDG) - Air Transport (IATA/ICAO): Not classified as dangerous goods under regulations on road/rail ADR/RID transport nor Maritime or Air Transport (IMDG – IATA/ICAO).

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Bulk transport not authorized. Admitted only in the authorized packagings.

XV.- REGULATORY INFORMATION

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

Directive 91/689/EEC on hazardous waste.

Directive 91/156/EEC on waste.

EC Regulation 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals REACH.

Regulation (EU) No. 453/2010, amending Regulation (EC) No. 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Regulation (EU) No. 2015/830, amending Regulation (EC) No. 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Regulation (EC) 1272/2008 on classification, labeling and packaging of substances and mixtures.

European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR).

International Maritime Dangerous Goods (IMDG: International Maritime Dangerous Goods)

Dangerous Goods Regulations by the International Air Transport Association (IATA: International Air Transport Association)

15.2 Chemical safety assessment: No chemical safety assessment for the mixture has been carried out.

XVI.- OTHER INFORMATION

Reason for the revision: ADR in section XIV has been changed.

Abbreviations and acronyms:

CL₅₀: Average Lethal Concentration

DL₅₀: Average Lethal Dose

ADI: Acceptable Daily Intake

AOEL: Operator acceptable exposure level.

b.w.: body weight

DT₅₀: Half degradation Time

CE₅₀: Effective average Concentration

NOAEL: No observed adverse effect level.

RID: European Agreement concerning International Railroad Transport of Dangerous Goods

ICAO: Technical Instructions for the Safe Transport of Dangerous Goods by Air.

NOEL: No observed effect level

ARfD: Acute Reference Dose

NOEC: No observed effect concentration.

K_{oc}: Adsorption Coefficient of organic carbon

IMDG: International Maritime Dangerous Goods

IATA: International Air Transport Association.


LOAEL: Lower observed adverse effect level.

Data Bases consulted:

ESIS: European System Information of Chemical Substances;

FOOTPRINT (2007/2008). Data Base FOOTPRINT on pesticide. Hertfordshire Univ. As part of the EU Project "EU-funded FOOTPRINT" (FP6-SSP-022704). <http://www.eu-footprint.org/ppdb.html>;

AGRITOX – Data Base on active substances;

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Book References:

“The Pesticide Manual”, version 3.2 2005-06, 13^a Edition, Editor: CDS Tomlin; Manual Toxicológico de Productos Fitosanitarios para Uso Sanitario – Instituto Nacional de Toxicología / AEPLA (Asociación Empresarial para la Protección de las Plantas (España).

Full text of hazard statements mentioned in section III:

H315: Causes skin irritation.

H318: Causes serious eye damage.

- **Recommendations concerning training:** Agricultural herbicide. USE RESTRICTED TO FARMERS AND PROFESSIONAL AGRICULTURAL SPRAY APPLICATORS for agricultural crops and cultures.

- **Recommendations concerning usage:** This material safety data sheet has been issued in accordance with Regulation 1907/2006/CE and amendments 453/2010 Regulation and 2015/830 Regulation.

The data included in this material safety data sheet are based on the best of our knowledge and are as accurate as possible. However, the above named supplier, cannot assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. They do not constitute a contractual guarantee of the product’s properties. These data cannot be altered nor transferred to other products.

Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.