

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

1.1. Product identifier

Product form : Mixture
Name : Maleic hydrazide potassium salt 250 g/L - SL
Trade name : Royal MH-30

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

1.2.1. Relevant identified uses

Main use category : Professional use
Industrial/Professional use spec : Plant protection products
Use of the substance/mixture : Plant growth regulator.

1.2.2. Uses advised against

Restrictions on use : No known evidence against using

1.3. Details of the supplier of the safety data sheet

Arysta LifeScience Great Britain Ltd.
Brooklands Farm
Cheltenham Road
WR11 2LS Evesham - United Kingdom
T +44 1386 425500
sds.request@arysta.com

1.4. Emergency telephone number

Emergency number : Europe/Rest of the world (English): +44(0)1235 239670

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

Adverse physicochemical, human health and environmental effects

To our knowledge, the product does not present any particular risk, under normal conditions of use. The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

EUH-statements : EUH210 - Safety data sheet available on request.
EUH401 - To avoid risks to human health and the environment, comply with the instructions for use.

2.3. Other hazards

Other hazards not contributing to the classification : This mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Maleic hydrazide potassium salt	(CAS-No.) 51542-52-0 (EC-No.) 257-261-0	20 - 25	Not classified
Isotridecanol, ethoxylated	(CAS-No.) 9043-30-5 (EC-No.) 500-027-2	2.5 - 10	Eye Dam. 1, H318

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Take victim to fresh air, in a quiet place and if necessary take medical advice.
First-aid measures after skin contact : Remove all contaminated clothing and footwear. Wash with water and soap as a precaution. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact : Rinse eyes with water as a precaution.

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First-aid measures after ingestion : Do not induce vomiting. Rinse mouth out with water. Drink plenty of water as a precaution. If symptoms persist call a doctor.

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

Symptoms/effects : None known.

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

The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Alcohol-resistant foam. Carbon dioxide (CO₂). Dry powder. Water spray.

Unsuitable extinguishing media : High volume water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : None known.

5.3. Advice for firefighters

Firefighting instructions : Exercise caution when fighting any chemical fire.

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Use self-contained breathing apparatus and chemically protective clothing.

Other information : Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Only qualified personnel equipped with suitable protective equipment may intervene.

6.1.2. For emergency responders

Protective equipment : Concerning personal protective equipment to use, see section 8.

6.2. Environmental precautions

Do not allow to enter drains or water courses.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up with inert absorbent material (for example sand, sawdust, a universal binder, silica gel). Take up large spills with pump or vacuum.

Other information : Keep in suitable, closed containers for disposal.

6.4. Reference to other sections

Concerning disposal elimination after cleaning, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid contact with skin, eyes and clothing.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed. Store in dry, cool, well-ventilated area.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Appropriate engineering controls:

Observe the label precautions.

Hand protection:

Protective gloves. Neoprene rubber gloves. Nitrile rubber gloves

Eye protection:

Chemical goggles or safety glasses

Skin and body protection:

Protective clothing

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Respiratory protection:

Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. Breathing apparatus with filter

Environmental exposure controls:

Prevent entry to sewers and public waters.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: light yellow.
Odour	: slight. soap.
Odour threshold	: No data available
pH	: 8 - 10
Relative evaporation rate (butylacetate=1)	: 0.22
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: > 104 °C
Auto-ignition temperature	: > 400 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: 1.1 (20 °C)
Solubility	: Water: Soluble
Log Pow	: Not applicable
Viscosity, kinematic	: 4.46 mm ² /s (20 °C) - 2.57 mm ² /s (40 °C)
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: Non oxidizing.
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases. Strong oxidizing agents.

10.6. Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal)	: Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation)	: Not classified. (Based on available data, the classification criteria are not met)

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LD50 oral rat	> 5000 mg/kg
LD50 dermal rat	> 5000 mg/kg
LC50 inhalation rat (Dust/Mist - mg/l/4h)	> 2.4 mg/l/4h (maximum attainable concentration - zero mortality)

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Maleic hydrazide potassium salt (51542-52-0)	
LD50 oral rat	> 5000 mg/kg (Maleic hydrazide)
LD50 dermal rabbit	> 5000 mg/kg (Maleic hydrazide)
LC50 inhalation rat (Dust/Mist - mg/l/4h)	> 4.03 mg/l/4h (maximum attainable concentration - zero mortality)

Skin corrosion/irritation : Not classified (Based on available data, the classification criteria are not met)

Additional information : Product :
Slightly irritant but not relevant for classification (rabbit)
Maleic hydrazide :
Slightly irritant but not relevant for classification (rabbit)

Serious eye damage/irritation : Not classified (Based on available data, the classification criteria are not met)

Additional information : Product :
Not irritating to rabbits on ocular application
Maleic hydrazide :
Not irritating to rabbits on ocular application

Respiratory or skin sensitisation : Not classified (Based on available data, the classification criteria are not met)

Additional information : Product :
Did not cause sensitisation (mouse) (LLNA)
Maleic hydrazide :
Maximisation Test (GPMT) :
Does not cause cutaneous sensitisation for guinea-pigs

Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met)

Carcinogenicity : Not classified (Based on available data, the classification criteria are not met)

Reproductive toxicity : Not classified (Based on available data, the classification criteria are not met)

STOT-single exposure : Not classified (Based on available data, the classification criteria are not met)

STOT-repeated exposure : Not classified (Based on available data, the classification criteria are not met)

Maleic hydrazide potassium salt (51542-52-0)	
NOAEL, male, female, oral, rat	1000 mg/kg bw/day (13 weeks, Target organ(s): liver, kidneys, lungs, spleen, testis)
NOAEL, male, female, oral, Dog	625 mg/kg bw/day (13 weeks, (OECD 409 method), Target organ(s): liver)
NOAEL, male, female, oral, Dog	750 ppm (1 years, Target organ(s): liver, thyroid gland)
NOAEL, male, Inhalation, rat	500 mg/m ³ (28 days, (OECD 412 method), Maleic hydrazide)
NOAEL, female, Inhalation	> 1000 mg/m ³ (28 days, (OECD 412 method), Maleic hydrazide)
NOAEL, male, female, Dermal, rat	1000 mg/kg bw/day (21 days, Target organ(s): liver)

Aspiration hazard : Not classified (Based on available data, the classification criteria are not met)

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Acute aquatic toxicity : Not classified

Chronic aquatic toxicity : Not classified

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NOEC, plants	3.2 mg/l (14 days, Myriophyllum spicatum)
LOEC, plants	10 mg/l (14 days, Myriophyllum spicatum)
ErC50, plants	21.3 mg/l (14 days, Myriophyllum spicatum)
EC50, plants	219 mg/l (7 days, Lemna gibba)
NOEC, plants	43.9 mg/l (7 days, Lemna gibba)
LD50, Honeybees, oral	> 174.25 µg/bee (48 Hours, Apis mellifera (bee))
LD50, Honeybees, Dermal	> 300 µg/bee (48 Hours, Apis mellifera (bee))

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Maleic hydrazide potassium salt (51542-52-0)

LC50 fish	> 134.8 mg/l/96h ((OECD 203 method), Oncorhynchus mykiss (Rainbow trout))
EC50 Daphnia	684.6 mg/l/48h ((OECD 202 method), Daphnia magna)
LOEC (chronic)	> 9.6 mg/l (32 days, Pimephales promelas, Maleic hydrazide)
NOEC chronic fish	9.6 mg/l (32 days, Pimephales promelas, Maleic hydrazide)
NOEC, fish	> 134.8 mg/l/96h ((OECD 203 method), Oncorhynchus mykiss (Rainbow trout))
NOEC, aquatic invertebrates	500.4 mg/l/48h ((OECD 202 method), Daphnia magna)
EC50, aquatic algae	> 134.8 mg/l/72h ((OECD 201 method), Pseudokirchneriella subcapitata)
NOEC, aquatic algae	> 134.8 mg/l/72h ((OECD 201 method), Pseudokirchneriella subcapitata)
EC50, plants	> 134.8 mg/l/72h ((OECD 201 method), Anabaena flos-aquae)
NOEC, plants	> 134.8 mg/l/72h ((OECD 201 method), Anabaena flos-aquae)
EC50, plants	64.3 mg/l (7 days, Myriophyllum aquaticum)
NOEC, plants	4.3 mg/l (7 days, Myriophyllum aquaticum)
EC50, plants	> 134.8 mg/l (4 days, Myriophyllum aquaticum)
NOEC, plants	13.5 mg/l (4 days, Myriophyllum aquaticum)

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

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Log Pow	Not applicable
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12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Component

Maleic hydrazide potassium salt (51542-52-0)	PBT/vPvB assessment not available as chemical safety assessment not conducted
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12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations	: Empty remaining contents. Do not re-use empty containers.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA
14.1. UN number		
Not regulated	Not regulated	Not regulated
14.2. UN proper shipping name		
Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)		
Not regulated	Not regulated	Not regulated
14.4. Packing group		
Not regulated	Not regulated	Not regulated
14.5. Environmental hazards		
Not regulated	Not regulated	Not regulated

14.6. Special precautions for user

Overland transport

Not regulated

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Transport by sea

Not regulated

Air transport

Not regulated

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list $\geq 0,1$ % / SCL

Contains no REACH Annex XIV substances

Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Substance(s) are not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC.

Directive 2012/18/EU (SEVESO III)

Seveso Additional information : Not applicable

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
IMDG	International Maritime Dangerous Goods
IATA	International Air Transport Association
LD50	Median lethal dose
LC50	Median lethal concentration
EC50	Median effective concentration
NOEC	No-Observed Effect Concentration
PBT	Persistent Bioaccumulative Toxic
vPvB	Very Persistent and Very Bioaccumulative

Full text of H- and EUH-statements:

Eye Dam. 1	Serious eye damage/eye irritation, Category 1
H318	Causes serious eye damage.
EUH210	Safety data sheet available on request.
EUH401	To avoid risks to human health and the environment, comply with the instructions for use.

Safety Data Sheet applicable for regions : EU - Europe

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.