

SECTION 1: Identification

1.1. Identification

Product form : Mixture
 Product name : ROYAL MH-30®
 Other means of identification : EPA Reg. No. 400-84

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

Recommended use : Plant growth regulator
 Restrictions on use : Agriculture, For professional users only

1.3. Details of the supplier of the safety data sheet

MacDermid Agricultural Solutions, Inc.
 c/o Arysta LifeScience North America, LLC
 15401 Weston Parkway, Suite 150 Cary, NC 27513 - USA
 T 1-866-761-9397

1.4. Emergency telephone number

Emergency number : Exposure calls (PROPHARMA): 1-866-303-6952 or +1-651-603-3432 (international)
 Spill calls (CHEMTREC) (Contract # CCN1779): 1-800-424-9300 or +1-703-527-3887 (international)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Eye Irrit. 2B H320

Full text of hazard classes and H-statements : see section 16

2.2. Label elements

GHS-US labelling

Signal word (GHS-US) : Warning
 Hazard statements (GHS-US) : H320 - Causes eye irritation
 Precautionary statements (GHS-US) : P264 - Wash hands thoroughly after handling.
 P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P337+P313 - If eye irritation persists: Get medical advice/attention.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	% (w/w)	GHS-US classification
1,2-dihydropyridazine-3,6-dione, monopotassium salt	(CAS-No.) 28382-15-2	21.7	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Comb. Dust

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

ROYAL MH-30®

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

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

Symptoms/effects after skin contact	: May cause slight irritation.
Symptoms/effects after eye contact	: Causes eye irritation.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Small fires: alcohol resistant foam. Large fires: Carbon dioxide. Dry chemical. Water spray.
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Burning produces irritating, toxic and noxious fumes.
Reactivity	: No dangerous reactions known.

5.3. Advice for firefighters

Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Avoid all eye and skin contact and do not breathe vapour and mist. Use personal protective equipment as required.
------------------	---

6.1.1. For non-emergency personnel

Protective equipment	: Refer to section 8.2.
Emergency procedures	: Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment	: Refer to section 8.2.
Emergency procedures	: Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

For containment	: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Contain large spillage with sand or earth.
Methods for cleaning up	: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials. Recover the product mechanically.

6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Use personal protective equipment as required. Provide good ventilation in process area to prevent formation of vapour. Handle in accordance with good industrial hygiene and safety procedures. Do not get in eyes, on skin, or on clothing.
Hygiene measures	: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Keep only in the original container. Keep container closed when not in use.
Incompatible products	: Strong bases. Strong acids. Oxidizer.

ROYAL MH-30®

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Incompatible materials : Sources of ignition. Direct sunlight.
Storage area : 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

ROYAL MH-30®	
ACGIH	Not applicable
OSHA	Not applicable
1,2-dihydropyridazine-3,6-dione, monopotassium salt (28382-15-2)	
ACGIH	Not applicable
OSHA	Not applicable

8.2. Appropriate engineering controls

Appropriate engineering controls : Avoid splashing. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure good ventilation of the work station.
Environmental exposure controls : Prevent leakage or spillage. Prevent contaminated water run-off.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure.

Hand protection:

Wear water impervious gloves. Polyethylene. PVC

Eye protection:

Safety glasses with side shields

Skin and body protection:

Impervious clothing

Respiratory protection:

In case of inadequate ventilation wear respiratory protection.

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Appearance : Clear.
Colour : Colourless light yellow
Odour : slight
Odour threshold : No data available
pH : 8.5 - 9.5
Melting point : No data available
Freezing point : No data available
Boiling point : No data available
Flash point : No data available
Relative evaporation rate (butylacetate=1) : 0.22
Flammability (solid, gas) : No data available
Explosive limits : No data available
Explosive properties : No data available
Oxidising properties : No data available

ROYAL MH-30®

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Vapour pressure	: No data available
Relative density	: No data available
Relative vapour density at 20 °C	: No data available
Density	: 1.125 - 1.145 g/cm ³ @ 25 °C
Solubility	: Miscible with water.
Log Pow	: No data available
Log Kow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: 3 mPa.s @ 25 °C

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases. Strong oxidizers.

10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure	: Inhalation. Skin and eye contact.
Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

ROYAL MH-30®	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rat	> 5000 mg/kg
LC50 inhalation rat (mg/l)	> 5.8 mg/l/4h
1,2-dihydropyridazine-3,6-dione, monopotassium salt (28382-15-2)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg

Skin corrosion/irritation	: Not classified. (Slightly irritant but not relevant for classification)
Serious eye damage/irritation	: Causes eye irritation.
Respiratory or skin sensitisation	: Not classified (No sensitizing reaction was observed for guinea pigs)
Germ cell mutagenicity	: Not classified (Mutagenicity : Ames test : negative)
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

ROYAL MH-30®

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Viscosity, kinematic	: No data available
Symptoms/effects after skin contact	: May cause slight irritation.
Symptoms/effects after eye contact	: Causes eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

1,2-dihydropyridazine-3,6-dione, monopotassium salt (28382-15-2)	
LC50 fish 1	> 1000 mg/l 96 h Rainbow trout
EC50 Daphnia 1	> 1000 mg/l 48 h
LC50 fish 2	1608 mg/l 96 h Bluegill

12.2. Persistence and degradability

ROYAL MH-30®	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

ROYAL MH-30®	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

ROYAL MH-30®	
Ecology - soil	Not established.

12.5. Other adverse effects

Other information	: Avoid release to the environment.
-------------------	-------------------------------------

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials	: Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated.

Transport by sea

IMDG

Transport hazard class(es) (IMDG)	: Not applicable
Marine pollutant	: No

Air transport

IATA

Transport hazard class(es) (IATA)	: Not applicable
Marine pollutant	: No

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for:

1,2-dihydropyridazine-3,6-dione, monopotassium salt	CAS-No. 28382-15-2	21.7%
---	--------------------	-------

FIFRA Labelling	
EPA Registration Number	400-84

ROYAL MH-30®

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

FIFRA Labelling

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use..

FIFRA Signal Word

Caution

FIFRA Human Health Hazards

Causes moderate eye irritation.

FIFRA First Aid

Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling.

FIFRA Environmental Hazards

Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water by disposal of equipment washwaters.

Under some conditions, maleic hydrazide may have a significant potential for runoff into surface water (primarily via dissolution in runoff water), for several days post-application. Conditions favoring runoff include poorly draining soils or wet soils with readily visible slopes, frequently flooded areas, areas where an intense or sustained rainfall is forecast to occur within 48 hours, areas overlying extremely shallow ground water, and areas overlying tile drainage systems that flow to surface water.

15.2. International regulations

CANADA

1,2-dihydropyridazine-3,6-dione, monopotassium salt (28382-15-2)

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

Data sources : ACGIH (American Conference of Government Industrial Hygienists). Canadian Centre for Occupational Health and Safety. Accessed at: http://www.ccohs.ca/oshanswers/legisl/whmis_classifi.html. European Chemicals Agency (ECHA) C&L Inventory database. Accessed at <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>. Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition. National Fire Protection Association. Fire Protection Guide to Hazardous Materials; 10th edition. WHMIS: The Workplace Hazardous Materials Information System: Canada's national hazard communication standard.

Other information : None.

Full text of H-statements:

Comb. Dust	Combustible Dust
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Eye Irrit. 2B	Serious eye damage/eye irritation, Category 2B
Skin Irrit. 2	Skin corrosion/irritation, Category 2
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H320	Causes eye irritation

Abbreviations and acronyms:

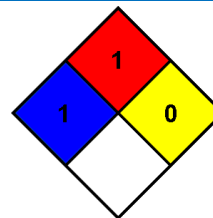
	ATE: Acute Toxicity Estimate
	CAS (Chemical Abstracts Service) number
	EC50: Environmental Concentration associated with a response by 50% of the test population.
	GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).
	LD50: Lethal Dose for 50% of the test population
	STEL: Short Term Exposure Limits
	TWA: Time Weighted Average

ROYAL MH-30®

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

- NFPA health hazard : 1 - Materials that, under emergency conditions, can cause significant irritation.
- NFPA fire hazard : 1 - Materials that must be preheated before ignition can occur.
- NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and not reactive with water.



SDS Prepared by: The Redstone Group, LLC.
6077 Frantz Rd
Suite 206
Dublin, Ohio, USA 43016
614.923.7472
www.redstonegrp.com

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