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

1.1. Product identifier — **ATONIK**

1.2. Relevant identified uses of the substance or mixture and uses advised against — Plant growth stimulator (phytostimulant)

1.3. Details of the supplier of the safety data sheet

Arysta LifeScience S.A.S.
BP 80 Route d'Artix
64150 Noguères - France
Tel. : + 33 (0)5 59 60 92 92
Fax. : + 33 (0)5 59 60 92 99
Contact : support_msds_eame@arystalifescience.com
Web Site : http://www.arystalifescience.eu/en/

1.4. Emergency telephone number — European emergency number: 112

National emergency services No.:

Austria	+431 406 43 43	Ireland	+ 353 (0)1 809 2566
Belgium	+32 70 245 245	Lithuania	+370 5 236 20 52 or +370 687 53378
Bulgaria	+359 2 9154 409		
Czech republic	+420 224 919 293, +420 224 915 402	Malta	2545 6504
		Norway	22 59 13 00
Denmark	82 12 12 12	Portugal	808 250 143
Estonia	112, or 16662 (+372 626 93 90 from abroad)	Romania	021.318.36.06
		Slovakia	+421 2 5477 4166
Finland	(09) 471 977 (direct) or (09) 4711 (exchange)	Spain	+ 34 91 562 04 20
		Sweden	08-331231
France	+33 (0)1 45 42 59 59	United Kingdom	0870 243 2241
Hungary	+36 80 20 11 99		

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) 1272/2008 "CLP"

Physical and chemical hazards	None
Health hazards	None
Environmental hazards	To avoid risks to human health and the environment, comply with the instructions for use

Classification according to Directive 1999/45/EC "DPD"

Physical and chemical hazards	None
Health hazards	None
Environmental hazards	To avoid risks to human health and the environment, comply with the instructions for use

Most important adverse effects

Physical and chemical hazards	/
Health hazards	/
Environmental hazards	/

Labelling according to Regulation (EC) 1272/2008 "CLP"	
Hazard pictogram(s)	None
Signal word(s)	None
Hazard statement(s)	
EUH401	To avoid risks to human health and the environment, comply with the instructions for use
Precautionary statement(s)	
P102	Keep out of reach of children
P270	Do not eat, drink or smoke when using this product
P261	Avoid breathing spray
P301+ 312	IF SWALLOWED Call a POISON CENTER or doctor/physician if you feel unwell
P271	Use only outdoors or in a well ventilated area
SP phrase (s)	SP1: Do not contaminate water with the product or its container (Do not clean application equipment near surface water / Avoid contamination via drains from farmyards and roads).

2.3. Others hazards

/

SECTION 3: Composition/information on ingredients

3.1 Substance

Not applicable.

3.2 Mixture

SL formulation

Dangerous substances	**Classification**		**Concentration (% w/w)**	**Concentration (g/L)**
	Regulation (EC) 1272/2008	**Directive 67/548/EEC**		
Substance name : Sodium 2-methoxy-5- nitrophenolate CAS No.: 67233-85-6 EC No. : Not allocated Index No. / REACh No./	Self-react. C H242 Acute Tox. 4 (oral) H302 Eye Dam 1 H318 Aquatic Chronic. 2 H411	E R2 F R11 Xn R22 Xi R41 N R51/53	0.1	1
Substance name : Sodium 2- nitrophenolate; sodium o-nitrophenolate CAS No.: 824-39-5 EC No. : Not allocated Index No. / REACh No./	Self-react. C H242 Acute Tox. 4 (oral) H302 Eye Irrit 2 H319 Aquatic Chronic. 2 H411	E R2 F R11 Xn R22 Xi R36 N R51/53	0.2	2
Substance name : Sodium 4- nitrophenolate; sodium p-nitrophenolate CAS No.: 824-78-2	Self-react. C H242 Acute Tox. 4 (oral) H302 Eye Irrit 2 H319 Aquatic Chronic. 2 H411	E R2 F R11 Xn R22 Xi R36 R51/53	0.3	3

EC No. : Not allocated Index No. / REACh No./				

For the complete text of H statements and R phrases, please refer to section 16.

Refer to Section 8 for OELs. Refer to Section 12 for PBT assessment.

SECTION 4: First aid measures

4.1. Description of first aid measures

In general	Remove the affected person from the danger zone to a well-ventilated room or to fresh air, and protect from chilling. Do not administer anything by oral route and do not try to make vomit, call a treatment center for poisoning cases or a doctor. Take the label or this SDS where possible.
After Inhalation	Immediately remove to fresh air. Call rescue in case of respiratory difficulty, unease or persistent headaches.
After eye contact	Rinse immediately and thoroughly with plenty of water during at least 10 to 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Seek medical advice if pain or redness persists.
After skin contact	Remove contaminated clothing and thoroughly wash the affected parts of the body with soap and water. Wash contaminated clothing before reuse.
After Ingestion	Do NOT induce vomiting, and do NOT give anything to drink. Call rescue and show the label.

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

No specific symptoms.

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

Treat symptomatically

SECTION 5: Fire-fighting measures

5.1. Extinguishing media	Suitable: Water spray, foam, dry chemical powder. Unsuitable: Water jet.
5.2. Special hazards arising from the substance or mixture	By thermal decomposition, possibility of formation of toxic gases (nitrogen oxide, carbon oxides, ammoniac, traces of nitriles).
5.3. Advice for fire-fighters	Intervention personnel should wear mask and individual respiratory equipment. Retain water or extinguishing media and eliminate safely.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures	Wear protective adapted equipment and take back non protected people. Withdrawal combustion and ignition sources.
6.2. Environmental precautions	Avoid and protect sewage, surface water, ground water and soil contamination. Retain spilled liquids and collect them with sand or other absorbent inert material (sepiolite). Absorbent inert material stocks have to be sufficient to face reasonably predictable spillage. Do not throw washing waters into sewers. In the case of spillage into water, stop dispersion of the product with adequate barrier. Contact competent authorities when a situation cannot be controlled rapidly and efficiently.
6.3. Methods and material for containment and cleaning up	Collect contaminated products on the surface concerned, transfer to closed drums before sending in a specialized incineration treatment center. Wash the contaminated surface with water and collect washing waters for treatment. Cover the contaminated zone using absorbent materials such as sand or sepiolite.
6.4. Reference to other sections	See section 8 for personal protection and section 13 for disposal considerations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling	Do not eat, drink or smoke when using. Wear appropriate protective clothes, adequate gloves (nitril), glasses or mask. AVOID ALL CONTACT OF SKIN, eyes or clothes with new or old product. Respect good hygienic body conditions and cleanliness of the working area. Wash hands abundantly after handling. Do not wash working clothes with household linen. Work upwind.
7.2. Conditions for safe storage, including any incompatibilities	Keep away from food, drink and animal feeding stuffs. Store in the original well closed container, in a fresh and well ventilated place. Store under cover, in an appropriate room, away from heat and sources of fire, at temperature <35°C. Do not store in room at temperature below –5°C.
7.3. Specific end uses	When using refer in priority to information written on the label.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Limit Exposure Value (LEV), Mean Exposure Value (MEV) : Not on the substances list of INRS ED 984

Additional exposure limits under the conditions of use (EFSA Scientific Report (2008) 191, 1-130):
AOEL = 0.007 mg/kg bw/day
ADI = 0.003 mg/kg bw/day
ARfD: 0.045 mg/kg bw/day

8.2. Exposure controls

Appropriate engineering controls

Prepare tank mix in a well-ventilated area.
When using refer in priority to information written on the label.

Individual protection measures, such as personal protective equipment

Respiratory protection

Preferably wear a mask covering all face with filter appropriate to organic vapor, powder or aerosol. A.P. Type filters.

Hand protection

Wear impervious gloves, resistant to organic solvents and to chemical products (complying with EN 374 standard), during mixing/loading and application phases.

Eyes protection

Preferably wear a mask, a face screen or protective glasses.

Skin protection

Wear appropriate protective clothes, covering all parts of the body, during application phase for spot treatment with hand-held sprayer.

Slip-resistant shoes or boots are recommended.

Environmental exposure controls

Comply with European and National Regulations relating to environment.
Only prepare the application volume required for immediate use.
Do not apply pesticides outdoors when rain is forecast or when it is windy out.
Pay particular attention to the protection of the groundwater in vulnerable areas.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Homogenous brown yellow liquid free from visible suspended matter
Odour	Faint non specific chemical odour
pH	8.36
Melting /freezing point	No data available
Boiling point / range	No data available
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	Not flammable
Upper/lower flammability or explosive limits	Not applicable
Vapour pressure	No data available
Vapour density	No data available
Relative density	1.0019 at 20°C
Solubility	
- Water	Miscible with water in all proportions.
- Organic solvents	Partially soluble in some polar solvents.
Partition coefficient n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	Kinematic viscosity was determined as 1.029 cS at 20°C and 0.6711 cS at 40°C
Explosives properties	Not explosive
Oxidising properties	Not oxidising

9.2. Other information /

SECTION 10: Stability and reactivity

10.1.	Reactivity	No pyrophoric or self-heating properties, nor release of flammable gas if contact with water, anticipated.
10.2.	Chemical stability	Stable for at least 2 years, at ambient temperature, in the original packaging.
10.3.	Possibility of hazardous reactions	This mixture is unlikely to react or polymerise under standard conditions.
10.4.	Conditions to avoid	Avoid storage at temperature > 35°C in a confined place.
10.5.	Incompatible materials	Avoid storage in containers made of light metals and alloys, especially iron, galvanized steel, copper, zinc, aluminium, lead, zinc and tin. Avoid contact with strong oxidants and strong reducing agents.
10.6.	Hazardous decomposition products	See point 5 for combustion products.

SECTION 11: Toxicological information

Information presented here below refers to experimental studies on the mixture, unless otherwise specified. Additional data on the active substance and the ingredients is provided where relevant.

Acute toxicity

Route of administration	**Species**	**Method**	**Results**
Oral	Rat	OECD 401	LD50 > 5000 mg/kg
Dermal	Rat and rabbit	OECD 402	LD50 > 2,000 mg/kg
Inhalation	Rat		> 6.7 mg/L

Skin irritation/corrosion: Non irritant

Eye irritation: Non-irritant

Respiratory or skin sensitisation : Not sensitising

Germ cell mutagenicity : No evidence of mutagenic potential

Carcinogenicity : No evidence of carcinogenic potential

Reproductive toxicity : No evidence of toxicity to reproduction

STOT-single exposure : No STOT classification

STOT-repeated exposure No STOT classification

Aspiration hazard : No aspiration hazard known.

SECTION 12: Ecological information

Information presented here below refers to experimental studies on the mixture, unless otherwise specified. Additional data on the active substance is provided where relevant.

12.1. Toxicity

Species	Route of exposure	Endpoint	Value
Bobwhite quail	oral (acute)	LD50	238536 mg/kg calculated from a.s. results using Finney formula
Bobwhite quail	Oral Long term	Reproductive NOEL	95 mg/kg bw/day (1000 ppm /kg feed)*
Cyprinus carpio	Flow through; 96-hr	LC50	6800 ml/L
Cyprinus carpio	Chronic	NOEC	1800 mg/L
Daphnia magna	static renewal; 48-hr	LC50	2000 mg/L
Daphnia magna	static renewal; chronic	NOEC	1.0 mg/L
Scenedesmus subspicatus	Static 72 hr	EbC50	>100 mg/L
Lemna gibba	Static 7d	EC50	7820 mg/L
Honey bee	Contact	LD50	>100 µg/bee*
Honey bee	Oral	LD50	57.1 µg/bee*
Predatory mites	Lab. test	LR_{50} (*Amblyseius californicus*)	>2 L/ha
Parasitoid	Lab. test	LR_{50} (*Aphidius* colemani)	>2 L/ha
Earthworms	Acute	LC50	>101.8 mg *
	Chronic	NOEC	NOEC = 37.0 mg
Micro-organisms	Nitrogen mineralization		No effect (< 25%) at 0.8 and 4.0 mg mixture/kg soil after 28 days
	Carbon mineralization		No effect (< 25%) at 0.8 and 4.0 mg ATONIK /kg soil after 28 days
Non-target plants	Seedling emergence	ER_{50} (*Allium cepa, Avena sativa, Lolium perenne, Triticum aestivum, Brassica oleracea, Daucus carota, Fagopyrum sp. Lactuga sativa, Pisum sativum and Solanum esculentum)*	> 5 L mixture/ha
	Vegetative vigor	ER_{50} (*Allium cepa, Avena sativa, Lolium perenne, Triticum aestivum, Brassica oleracea, Daucus carota, Fagopyrum sp. Lactuga sativa, Pisum sativum and Solanum esculentum)*	> 5 L mixture/ha

* Test carried out using a concentrated form of mixture containing 11.6% Na 5-NG, 23.3% Na o-NP, 42.6% Na p-NP

12.2. Persistence and degradability

In soil (20 °C, 40% MWHC)

Na 5 NG, $DT_{50\ lab}$ (aerobic) = 0.1-0.6 days
Na oNP, $DT_{50\ lab}$ (aerobic) = 0.4-1.5 days
Na pNP, $DT_{50\ lab}$ (aerobic) = 0.6-2.2 days

In water

Na 5 NG, $DT_{50\ water}$ = 2.9 days (geometric mean)
Na 5 NG, $DT_{50\ water/sediment}$ = 3.2 days (geometric mean)
Na oNP, $DT_{50\ water}$ = 2.1 days (geometric mean)
Na oNP, $DT_{50\ water/sediment}$ = 2.1 days (geometric mean)

Na pNP, $DT_{50\ water}$ = 2.8 days (geometric mean)
Na pNP, $DT_{50\ water/sediment}$ = 3.3 days (geometric mean)

Abiotic hydrolysis: No data available

In air

Vapour pressure :

Na 5NG : < 1.00 x 10-7 mm Hg at 25°C (<1.33 x 10-5 Pa) (99.7%)
Na oNP : 5.81 x 10-7 mmHg at 25°C (7.75 x 10-5 Pa) (99.3%)
Na pNP : < 1.00 x 10-7 mm Hg at 25°C (<1.33 x 10-5 Pa) (99.8%)

Henry's law constant (Calculated values at 25°C) :

Na 5NG : 4.51 x 10-4 Pa m3/mol
Na oNP : 5.55 x 10-4 Pa m3/mol
Na pNP : 5.55 x 10-4 Pa m3/mol

Photochemical oxidative degradation:

Na 5NG DT50 = 2.2 days
Na oNP : DT50 = 2.3 days
Na pNP : DT50 = 2.3 days

12.3. Bioaccumulative potential

No bioaccumulative potential

12.4. Mobility in soil

The adsorption and desorption characteristics of the active substances were tested on 4 soils at 4 concentrations.
Mean Koc
Na 5 NG 463.4
Na O-NP: 156.1
Na P-NP: 288.1

12.5. Results of PBT and vPvB assessment

Constituents	Persistence	Bioaccumulation	Toxicity	Conclusion
Na 5NG	Very rapid degradation	No bioaccumulative potential	Toxicity criteria for PBT and vPvB classification not met	Not a PBT Not a vPvB
Na oNP	Very rapid degradation	No bioaccumulative potential	Toxicity criteria for PBT and vPvB classification not met	Not a PBT Not a vPvB
Na pNP	Very rapid degradation	No bioaccumulative potential	Toxicity criteria for PBT and vPvB classification not met	Not a PBT Not a vPvB

12.6. Other adverse effects

None reported

SECTION 13: Disposal considerations

13.1. Waste treatment methods — Unusable products, out of date and residues are considered as HAZARDOUS WASTE according to Directive 2008/98/EC.

Product/packaging — Disposal of important amounts must be made by duly authorized specialists.
Incineration should be made in authorized and specialized plant.
Eliminate the product and its packaging with care and in a responsible way.
Do not throw near ponds, rivers, ditches or into sewers.
Wash contaminated surfaces with water and collect washing waters for treatment.
Make sure that local Regulations are respected.

Washing products — Rinse containers with water and pour into the spray tank.
Do not throw into sewer. Do not contaminate natural waters.
Clean up application materials on the treated area and eliminate waters by spraying on one area.

Waste Code — 07 WASTES FROM ORGANIC CHEMICAL PROCESSES
07 04 wastes from the manufacture, formulation, supply and use (MFSU) of organic plant protection products

SECTION 14: Transport information

REGULATION	RID/ADR (TERRESTRIAL)	IMDG (MARITIME)	OACI/IATA (AERIAL)
UN NUMBER	NOT REGULATED FOR TRANSPORT		
TRANSPORT HAZARD CLASS(ES)			
PACKING GROUP			
ENVIRONMENTAL LABEL			
MARKING AND LABELLING			
UN PROPER SHIPPING NAME			

SECTION 15: Regulatory information

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

- Active ingredients are approved for use in plant protection products as listed in Regulation (EU) No 540/2011 of 25 May 2011 implementing Regulation (EC) No 1107/2009 of the European Parliament and of the Council as regards the list of approved active substances for use in plant protection products.

- In addition, Active ingredients are not subject to:
  - Regulation (EC) No 1005/2009 of the European Parliament and of the Council of 16 September 2009 on substances that deplete the ozone layer,
  - 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,
  - Regulation (EC) No 689/2008 of the European Parliament and of the Council of 17 June 2008 concerning the export and import of dangerous chemicals),
  - Decision No 2455/2001/EC of the European Parliament and of the Council of 20 November 2001 establishing the list of priority substances in the field of water policy and amending Directive 2000/60/EC.

- All the other compounds are regulated by **Regulation (EC) No. 1907/2006 (REACh)**.

National information on the regulatory status of the mixture

- The placing of mixture on the market as a plant protection product is subject to authorization by Member States under Regulation (EC) No. 1107/2009 of the European Parliament and of the Council of 21 October 2009.

Other prescriptions

To avoid risks to man and the environment, comply with the instructions for use (Directive 1999/45/EC, Article 10, n° 12).
Storage classification (ICPE) : 1510 (French Regulation)

15.2. Chemical safety assessment

The placing of mixture on the market as a herbicide is subject to evaluation and authorization by Member States under Regulation (EC) No. 1107/2009 of the European Parliament and of the Council of 21 October 2009.

SECTION 16: Other information

a) Revisions: Changes made to the previous version of the safety data sheet are marked with the symbol

b) Abbreviations and acronyms used in the safety data sheet:

ADI: Acceptable Daily Intake
AOEL: Acceptable Operator Exposure Level
ARfD: Acute Reference Dose
CLH: Classification and Labelling, Harmonised (Annex VI to CLP Regulation)
CLP: Classification, Labelling and Packaging
DPD: Dangerous Preparations Directive
DT_{50}: Period required for 50 percent dissipation (define method of estimation)
DT_{90}: Period required for 90 percent dissipation (define method of estimation)
EC_{50}: Median effective Concentration
Koc: adsorption coefficient
LC_{50}: Lethal Concentration, median
LD_{50}: Lethal Dose, median
NOAEL/NOEL: No Observed (Adverse) Effect Level
NOEC: No Observed Effect Concentration
OEL: Occupational Exposure Limit
PNEC: Predicted No Effect Concentration
STOT: Specific Target Organ Toxicity
TLV-TWA: Threshold limit value - Time weighted average
TLV-STEL: Threshold limit value - Short-term exposure limit

c) Key literature references and sources for data:

Applicant's registration dossier.
EFSA Scientific Report (2008) 191, 1-130
Review Report for Sodium 5-nitroguaiacolate, sodium o-nitrophenolate, sodium p-nitrophenolate, SANCO/210/08 – rev. 2, 17 May 20131 (European Commission)

d) Methods of evaluating information, referred to in Article 9 of Regulation (EC) No 1272/2008, used for the purpose of classification:

- by testing on the parent mixture and/or extrapolation from similar for acute health and ecotoxicological effects,
- by calculation for sub-chronic and chronic effects on health, and environmental chronic hazards.

e) List of relevant R phrases, hazard statements, safety phrases and/or precautionary statements which are not written out in full under Sections 2 to 15;

Hazard statements text
H242: Heating may cause a fire: Self reactive substance Type C
H302: Harmful if swallowed (Acute Toxicity Category 4)
H318 Causes serious eye damage (Eye Dam. Category 1)
H319: Causes serious eye irritation (Eye Irrit. Category 2)
H411: Toxic to aquatic life with long term effects (Aquatic Chronic Category 2)

Risk phrases text
R2 : Risk of explosion by shock, friction, fire or other sources of ignition.
R11 : Highly flammable.
R22 : Harmful if swallowed.
R36: Irritating to eyes
R41 : Risk of serious damage to eyes.
R51/53 : Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

f) Advice on any training appropriate for workers to ensure protection of human health and the environment.

For agriculture use, please follow the Good Agricultural Practices and the instructions written on the label.
Comply with national implementation of Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work.

This MSDS completes technical use sheets but does not replace them. Information herein is based on our present knowledge concerning the product, at the edition date. It is honestly given.
The attention of users is drawn to potential risks taken when the product is used for other uses than those for which it is made.
The user has to know and comply with all regulations concerning its activity.
It remains the user's own responsibility to make sure that the information is appropriate and complete for his special use of this product.
The aim of all the regulations mentioned is to help the person concerned to comply with the rules which are his own responsibility. This listing cannot be considered as exhaustive. The person concerned has to make sure that he has no other obligations due to texts specific to particular applications.