SAFETY DATA SHEET

YaraVita Mancuflo

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

1.1 Product identifier

Product name	:	YaraVita Mancuflo
Product code	:	PYP73M
Product type	:	liquid

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

Identified uses
Industrial distribution. Industrial USE to formulate chemical product mixtures. Professional formulation of fertiliser products. Professional USE as fertiliser at Farm - loading and spreading (includes soil conditioning). Professional USE as fertiliser in Greenhouse (e.g. Fertigation, includes pH control of fertiliser solution with acid). Professional USE as liquid fertiliser in open field (e.g. Fertigation). Professional USE as fertiliser - maintenance of equipment.

Uses advised against	:	Other non-specified industry
Reason	:	Due to lack of related experience or data, the supplier cannot approve this use.

1.3 Details of the supplier of the safety data sheet

Yara UK Limited

Address

Street	:	Harvest House, Europarc
Postal code	:	DN37 9TZ
City	:	Grimsby, North East Lincolnshire
Country	:	United Kingdom
Telephone number	:	+44 (0) 1472 889250
Fax no.	:	+44 (0) 1472 889251
e-mail address of person responsible for this SDS	:	yarauk.hesq@yara.com

1.4 Emergency telephone number

National advisory body/Poison Center	:	Not available.

Supplier

Telephone number	:	National Chemical Emergency Centre

		+44 (0) 1865 407333
Hours of operation	:	24h

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

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

Classification : Aquatic Acute1, H400
Aquatic Chronic1, H410

Classification according to Directive 1999/45/EC [DPD]

Classification : N, R50/53

See Section 16 for the full text of the R phrases or H statements declared above.
See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention	:	Avoid release to the environment.
Response	:	Collect spillage.
Disposal	:	Dispose of contents and container in accordance with all local, regional, national and international regulations.
Supplemental label elements	:	Not applicable.
EU Regulation (EC) No. 1907/2006 (REACH) Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	:	Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings	:	Not applicable.
Tactile warning of danger	:	Not applicable.

2.3 Other hazards

Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, : Not applicable.

Annex XIII
Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : Not applicable.

Other hazards which do not result in classification : None.

SECTION 3: Composition/information on ingredients

Substance/mixture : Mixture

Product / ingredient name	Identifiers	%	Classification		Type
			67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]	
manganese carbonate	RRN: 01-2119442695-32 EC: 209-942-9 CAS : 598-62-9	>=35 - <50	Not classified.	Not classified.	[2]
dicopper oxide	RRN: 01-2119513794-36 EC: 215-270-7 CAS : 1317-39-1 Index: 029-002-00-X	>=7 - <10	Xn; R50/53 N; R36 Xi; R20/22	Acute Tox. 4 H302 Acute Tox. 4 H332 Eye Dam./Irrit. 2 H319 Aquatic Acute 1 H400 Aquatic Chronic 1 H410 M-factor : 10	[1]
2-PROPENOIC ACID, HOMOPOLYMER, SODIUM SALT	RRN: Not available. EC: CAS : 9003-04-7	>=1 - <2	Xi; R36	Eye Dam./Irrit. 2 H319	[1]

Type
[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

See Section 16 for the full text of the R phrases or H statements declared above.
There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.
Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : Rinse with plenty of running water. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation : It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If inhaled, remove to fresh air. Get medical attention if adverse health effects persist or are severe. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Wash with soap and water. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None identified.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : In a fire or if heated, a pressure increase will occur and the container may burst. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
metal oxide/oxides
ammonia
Avoid breathing dusts, vapors or fumes from burning materials.
In case of inhalation of decomposition products in a fire, symptoms may be delayed.

5.3 Advice for firefighters

Special precautions 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.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece 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 : Not available.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May

be harmful to the environment if released in large quantities. Collect spillage.

6.3 Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

6.4 Reference to other sections

: See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Recommendations : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent

leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Bund storage facilities to prevent soil and water pollution in the event of spillage.

Seveso II Directive - Reporting thresholds

Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
E1: Hazardous to the aquatic environment - Acute 1 and Chronic 1	100 t	200 t
C9i: Very toxic for the environment	100 t	200 t

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational exposure limits

Product / ingredient name	Exposure limit values
manganese carbonate	**EH40/2005 WELs (2003-05-01)** Time Weighted Average (TWA) 0,5 mg/m3 (Calculated as Mn)

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

DNELs/DMELs

Product / ingredient name	Type	Exposure	Value	Population	Effects
manganese carbonate	DNEL	Long term Dermal	0,004 mg/kg bw/day	Workers	Systemic
manganese carbonate	DNEL	Long term Inhalation	0,2 mg/m³	Workers	Systemic
manganese carbonate	DNEL	Long term Dermal	0,002 mg/kg bw/day	Consumers	Systemic
manganese carbonate	DNEL	Long term Inhalation	0,043 mg/m³	Consumers	Systemic
dicopper oxide	DNEL	Long term Dermal	137 mg/kg bw/day	Workers	Systemic

dicopper oxide	DNEL	Long term Oral	0,041 mg/kg bw/day	Consumers	Systemic

PNECs

Product / ingredient name	Type	Compartment Detail	Value	Method Detail
manganese carbonate	PNEC	Fresh water	0,0084 mg/l	Assessment Factors
manganese carbonate	PNEC	Marine water	0,0008 mg/l	Assessment Factors
manganese carbonate	PNEC	Fresh water sediment	8,18 mg/kg dwt	Assessment Factors
manganese carbonate	PNEC	Marine water sediment	0,81 mg/kg dwt	Assessment Factors
manganese carbonate	PNEC	Soil	8,15 mg/kg dwt	Assessment Factors
manganese carbonate	PNEC	Sewage Treatment Plant	100 mg/l	Assessment Factors
dicopper oxide	PNEC	Fresh water	0,0078 mg/l	Assessment Factors
dicopper oxide	PNEC	Marine water	0,0052 mg/l	Assessment Factors
dicopper oxide	PNEC	Fresh water sediment	87 mg/kg dwt	Assessment Factors
dicopper oxide	PNEC	Marine water sediment	676 mg/kg dwt	Assessment Factors
dicopper oxide	PNEC	Soil	65 mg/kg dwt	Assessment Factors
dicopper oxide	PNEC	Sewage Treatment Plant	0,23 mg/l	Assessment Factors

8.2 Exposure controls

Appropriate engineering controls : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Individual protection measures

Hygiene measures : A washing facility or water for eye and skin cleaning purposes should be present.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
> 8 hours (breakthrough time): Protective gloves should be worn under normal conditions of use.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks

involved.

Other skin protection	:	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	:	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Environmental exposure controls	:	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	:	liquid
Color	:	Pink Brown.
Odor	:	Not determined.
Odor threshold	:	Not determined.
pH	:	8
Melting point/freezing point	:	-8 °C
Initial boiling point and boiling range	:	Not determined
Flash point	:	Not determined
Evaporation rate	:	Not determined
Flammability (solid, gas)	:	Non-flammable.
Burning time	:	Not determined
Burning rate	:	Not determined
Upper/lower flammability or explosive limits	:	**Lower:** Not determined **Upper:** Not determined
Vapor pressure	:	Not determined
Vapor density	:	Not determined
Relative density	:	1,751
Bulk density	:	Not determined
Partition coefficient: n-octanol/water	:	Not determined
Auto-ignition temperature	:	Not determined
Viscosity	:	**Dynamic:** 1.500 - 2.500 mPa.s **Kinematic:** Not determined
Explosive properties	:	None.
Oxidizing properties	:	None.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : The product is stable.

10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid : No specific data.

10.5 Incompatible materials : Urea reacts with calcium hypochlorite or sodium hypochlorite to form the explosive nitrogen trichloride.

10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product / ingredient name	Result	Species	Dose	Exposure	References
manganese carbonate					
	LD50 Oral	Rat	> 2.000 mg/kg OECD 420	-	IUCLID5
	LC50 Inhalation	Rat	> 5,34 mg/l	4 h	
dicopper oxide					
	LD50 Oral	Rat - Female	> 928 mg/kg OECD 401	-	IUCLID 5
	LC50 Inhalation	Rat	3,34 mg/l OECD 403	4 h	IUCLID 5
	LD50 Dermal	Rabbit	> 2.000 mg/kg OECD 402	-	IUCLID 5
2-PROPENOIC ACID, HOMOPOLYMER, SODIUM SALT					
	LD50 Oral	Rat	> 40.000 mg/kg	-	PSTGAW 20,16,1953

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Product / ingredient name	Result	Species	Score	Exposure	Observation	References
dicopper oxide	Eyes - Moderate irritant OECD 405	Rabbit		21 d	-	IUCLID 5
2-PROPENOIC ACID,	Eyes - Moderate	Rabbit			-	

HOMOPOLYMER, SODIUM SALT	irritant					

Conclusion/Summary
Skin : No known significant effects or critical hazards.
Eyes : No known significant effects or critical hazards.
Respiratory : No known significant effects or critical hazards.

Sensitization

Product / ingredient name	Route of exposure	Species	Result	References
dicopper oxide	Skin	Pig	Not sensitizing OECD 406	

Conclusion/Summary
Skin : No known significant effects or critical hazards.
Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Product / ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure	References
dicopper oxide	-	Negative	-	Rat	Oral : > 1500 mg/kg 416 Two-Generation Reproduction Toxicity Study		IUCLID 5
	-	-	Negative	Rabbit	Oral : 6 mg/kg bw/day OECD 414		IUCLID 5

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Information on the likely routes of exposure : No known significant effects or critical hazards.

Potential acute health effects

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Eye contact : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation : No specific data.

Ingestion : No specific data.

Skin contact : No specific data.

Eye contact : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Long term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Potential chronic health effects

Product / ingredient name	Result	Species	Dose	Exposure	References
dicopper oxide	Sub-chronic NOAEL Oral	Rat	1000 mg/kg OECD 408	92 days 7 days per week	IUCLID 5

Conclusion/Summary : No known significant effects or critical hazards.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Product / ingredient name	Result	Species	Exposure	References
manganese carbonate				

	Acute EC50 > 4 mg/l Fresh water OECD 202	Aquatic invertebrates. Daphnia	48 h	IUCLID5
dicopper oxide				
	Acute LC50 0,08 - 0,28 mg/l Fresh water	Fish - Fish	96 h	IUCLID 5
	Acute EC50 0,028 - 0,792 mg/l Fresh water OECD 211	Aquatic invertebrates. Water flea	21 d	IUCLID 5
	Acute EC50 0,333 mg/l Fresh water OECD 201	Aquatic plants - Algae	72 h	IUCLID 5
2-PROPENOIC ACID, HOMOPOLYMER, SODIUM SALT				
	Acute LC50 > 200 mg/l Fresh water	Fish - Fish.	96 h	

Conclusion/Summary : Very toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

Conclusion/Summary : No known significant effects or critical hazards.

Product / ingredient name	Aquatic half-life	Photolysis	Biodegradability	References
manganese carbonate				
			Readily biodegradable	

12.3 Bioaccumulative potential

Conclusion/Summary : No known significant effects or critical hazards.

12.4 Mobility in soil

Soil/water partition coefficient (KOC) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product,

solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Hazardous waste : The classification of the product may meet the criteria for a hazardous waste.

Packaging

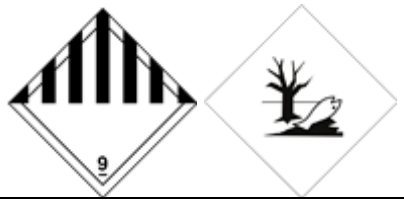
Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

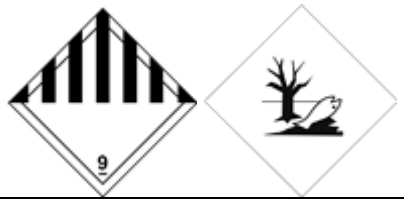
Special precautions : This material and its container must be disposed of in a safe way.
Care should be taken when handling emptied containers that have not been cleaned or rinsed out.
Empty containers or liners may retain some product residues.
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

Regulation: ADR/RID	
14.1 UN number	3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (dicopper oxide,)
14.3 Transport hazard class(es)	9 
14.4 Packing group	III
14.5 Environmental hazards	Yes.
14.6 Additional information	**: ADR/RID**
Hazard identification number	: 90
Limited quantity	: LQ7
Tunnel code	: (E)

Regulation: ADN	
14.1 UN number	3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (dicopper oxide,)
14.3 Transport hazard class(es)	9 
14.4 Packing group	III
14.5 Environmental hazards	Yes.
14.6 Additional information	**: ADN**
Marine pollutant	: Yes.

Regulation: IMDG	
14.1 UN number	3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (dicopper oxide,)
14.3 Transport hazard class(es)	9 
14.4 Packing group	III
14.5 Environmental hazards	Yes.
14.6 Additional information	**: IMDG**
Marine pollutant	**:** Yes.
Special precautions for user	**:** Not applicable.
Emergency schedules (EmS)	**:** F-A, S-F

Regulation: IATA	
14.1 UN number	3082
14.2 UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (dicopper oxide,)
14.3 Transport hazard class(es)	9 
14.4 Packing group	III
14.5 Environmental hazards	Yes.
14.6 Additional information	**: IATA**
Marine pollutant	**:** Yes.
Special precautions for user	**:** Not applicable.
Passenger and Cargo Aircraft	
Quantity limitation	**:** 450.00 L
Packaging instructions	**:** 964
Cargo Aircraft	
Quantity limitation	**:** 450.00 L
Packaging instructions	**:** 964

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not available.

14.8 IMSBC **:** Not applicable.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)
Annex XIV - List of substances subject to authorization
Substances of very high concern

Not applicable.

Other EU regulations

Europe inventory	:	Not determined.
Integrated pollution prevention and control list (IPPC) - Air	:	Not listed
Integrated pollution prevention and control list (IPPC) - Water	:	Not listed

Seveso II Directive

This product is controlled under the Seveso II Directive.

Danger criteria

Category
E1: Hazardous to the aquatic environment - Acute 1 and Chronic 1 C9i: Very toxic for the environment

National regulations

Notes	:	To our knowledge no other country or state specific regulations are applicable.
15.2 Chemical Safety Assessment	:	This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

Abbreviations and acronyms	:	ATE = Acute Toxicity Estimate CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008] DNEL = Derived No Effect Level DMEL = Derived Minimal Effect Level EUH statement = CLP-specific Hazard statement PNEC = Predicted No Effect Concentration RRN = REACH Registration Number PBT = Persistent, Bioaccumulative and Toxic vPvB = Very Persistent and Very Bioaccumulative bw = Body weight
Key literature references and sources for data	:	EU REACH IUCLID5 CSR Regulation (EC) No 1272/2008 Annex VI National Institute for Occupational Safety and Health, U.S. Dept. of Health, Education, and Welfare, Reports and Memoranda Registry of Toxic Effects of Chemical Substances IHS, 4777 Levy Street, St Laurent, Quebec HAR 2P9, Canada.

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Aquatic Acute 1 H400 Aquatic Chronic 1 H410	Calculation method Calculation method

Full text of abbreviated H statements	:	H302 Harmful if swallowed. H332 Harmful if inhaled. H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.
H319 Causes serious eye irritation.

Full text of classifications [CLP/GHS]	:	**Acute Tox. 4, H302:** ACUTE TOXICITY: ORAL - Category 4 **Acute Tox. 4, H332:** ACUTE TOXICITY: INHALATION - Category 4 **Aquatic Acute 1, H400:** AQUATIC TOXICITY (ACUTE) - Category 1 **Aquatic Chronic 1, H410:** AQUATIC TOXICITY (CHRONIC) - Category 1 **Eye Dam./Irrit. 2, H319:** SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
Full text of abbreviated R phrases	:	R22- Harmful if swallowed. R36- Irritating to eyes. R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Full text of classifications [DSD/DPD]	:	Xn - Harmful Xi - Irritant N - Dangerous for the environment.
Date of printing	:	27.11.2013
Date of issue/ Date of revision	:	07.01.2013
Date of previous issue	:	00.00.0000
Version	:	1.0
Prepared by	:	Yara Product Classifications & Regulations.

|| Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information provided in this Safety Data Sheet is accurate as at the date of its issue. The information it contains is being given for safety guidance purposes and relates only to the specific material and uses described in it. This information does not necessarily apply to that material when combined with other material(s) or when used otherwise than as described herein, since all materials may represent unknown hazards and should be used with caution. Final determination of the suitability of any material is the sole responsibility of the user.

Annex to the extended Safety Data Sheet (eSDS) - Exposure Scenario:

Identification of the substance or mixture

Product definition	:	Mixture
Product name	:	YaraVita Mancuflo
Exposure Scenario information	:	Not yet complete.