SAFETY DATA SHEET

(Reach Regulation (EC) N0 1907/2006)

SECTION 1: Identification of the Substance/ Mixture and of the Company/ Undertaking

1.1. Product identifier

- Product name: **Chromosome Resolution Additive**
- Product code: **GGS-JL003a**
- Pack size: **1ml vial**
- REACH: A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

Identified uses: Laboratory chemicals, Manufacture of substances

Chromosome Resolution Additive
Is a formulation that consistently prevents chromosome contraction and encourages chromosome elongation by loosening the chemical bonding within the supercoiled structure. It has been designed for use with tissues resistant to existing prophase techniques such as bone marrows and solid tumors.

1.3. Details of the supplier of the safety data sheet

- Registered company name: Genial Helix Limited
- Address: Genial Helix, CoWorkz Business Centre, Minerva Avenue, Off Sovereign Way, Chester, Flintshire, CH1 4QL, U.K.
- Telephone: +44 (0)1244 757 155
- Email: info@genialhelix.com
- Website: www.genialhelix.com

1.4. Emergency telephone number: +44 (0)1244 757 155

- Emergency Response Organisation: Genial Helix Limited | www.genialhelix.com

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture in compliance with EC regulation No. 1272/2008 and its amendments.

- Oxidizing solids (Category 3), H272
- Acute toxicity, Oral (Category 3), H301
- Eye irritation (Category 2), H319
- Short term (acute) aquatic toxicity (Category 1), H400

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2. Label elements

Labelling in compliance with EC regulation No. 1272/2008 and its amendments

Pictograms:

Single Word: Danger

Hazard statement(s)

H272	May intensify fire; oxidizer
H301	Toxic if swallowed
H319	Causes serious eye irritation
H400	Very toxic to aquatic life

Precautionary statement(s).

P273	Avoid release to the environment
P301 + P310	If SWALLOWED: Immediately call a POISON CENTRE or doctor/ physician.

P305 + P351 + P383	IF IN EYES: Rinse immediately with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Supplement Hazard Statements	None

Restricted to professional users

Reduced Labelling (<= 125ml)

Pictograms:

Single Word:	Danger

Hazard statement(s)

H301	Toxic if swallowed

Precautionary statement(s).

P301 + P310	If SWALLOWED: Immediately call a POISON CENTRE or doctor/ physician.
P305 + P351 + P383	IF IN EYES: Rinse immediately with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Supplement Hazard Statements	None

2.3. Other Hazards

None

SECTION 3: Composition/information on ingredients

3.1. Substances

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	Classification	Concentration %
Sodium Nitrite		
CAS No: 7632-00-0 EC No: 231-555-9	Acute Tox. 3; Eye Irrit, 2; Aquatic Acute 1; H272, H301, H319, H400	0.0001% in Stock Solution

For the full text of the H-Statements mentioned in the Section, see Section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2. Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/ or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media
For this substance/ mixture no limitations or extinguishing agents are given

5.2 Special hazards arising from the substance or mixture
Nitrogen oxides (NOx)
Sodium oxides
Combustible
Risk of dust explosion
Development of hazardous combustion gases or vapours possible in the event of fire.
Has a fire-promoting effect due to release of oxygen.

5.3 Advice for firefighters
Stay in danger area only when wearing self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or wearing suitable protective clothing.

5.4 Further information
Suppress (knock down) gasses/ vapours/ mists with water spray jet.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containing and cleaning up
Cover drains. Contain spillage, and then collect. Wear a lab coat and rubber gloves, wipe with paper tissues and keep in suitable container for disposal according to local regulations. Keep in suitable container, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling
Avoid contact with skin or eyes. Keep container tightly closed when not in use. Provide appropriate exhaust ventilation. Keep away from sources of ignition.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at end of workday.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Storage conditions
Store product at 4^{0}C in a refrigerator in a suitable container. Keep lid tightly closed. Correctly stored, the product is stable for up to 12 months.

Storage class

Storage class (TRGS 510): 5.1A: Oxidizing hazardous material.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with workplace control parameters

Contains no substances with occupational exposure limit values

8.2 Exposure controls

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN (166(EU)

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Body Protection

Impervious clothing, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use full-face particle type N100 (US) or type P3 (EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)

Control of environmental exposures

Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: Liquid (red)
b)	Odour	Odourless
c)	Odour Threshold	No data available
d)	pH	6.8 - 7.8
e)	Melting point/ freezing Point	No data available
f)	Initial boiling point and boiling range	98°C
g)	Flash point	N/A
h)	Evaporation rate	N/A
i)	Flammability (liquid)	Non-Flammable
j)	Upper/lower flammability or explosive limits	N/A
k)	Vapour pressure	As of water (0.3 atm)
l)	Vapour density	No data available
m)	Relative density	No data available
n)	Water solubility	Soluble
o)	Partition coefficient:	No data available

	noctanol/water	
p)	Auto-ignition temperature	N/A
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	Nil
t)	Oxidizing properties	Nil

9.2 Other safety information
No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions

10.3 Possibility of hazardous reactions
Risk of explosion with:
Combustible substances
Aluminium
Sulfides
Cyanides
Potassium cyanide
Urea
Hydrazine and derivatives
Oxidisable substances
Unsaturated hydrocarbons
Sodium amide
Phenol
Ethylene oxide
Strong reducing agents
Ammonium salts
Amides
Hydrochloric acid
Potassium hexacyanoferrate (II)
A risk of explosion and/ or toxic gas formation exists with the following substances:
Acids
With
Amines
Release of:
Nitrosamine
Risk of ignition of formation of inflammable gasses or vapours with:
Butadiene
Exothermic reaction with:
Ethylene oxide

10.4 Conditions to avoid
Exposure to moisture
No information available.

10.5 Incompatible materials
Strong oxidising agents

10.6 Hazardous decomposition products
Other decomposition products – No data available
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral – Rat – 186 mg/kg

Remarks: (RTECS)
Inhalation: No data available
Dermal: No data available

Skin corrosion/ irritation
No data available

Serious eye damage/ eye irritation
Eyes – Rabbit
Result: Moderate eye irritation
(OECD Test Guideline 405)

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity
No data available

Specific target organ toxicity – single exposure
No data available

Specific target organ toxicity – repeated exposure
No data available

Aspiration hazard
No data available

Additional information
RTECS: RA1225000
Headache, nausea, incoordination. Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 – 4 hours or longer.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish	flow-through test LC50 – Oncorhynchus mykiss (rainbow trout) – 0.54 – 26.3 mg/l – 96h Remarks: (ECHA)
Toxicity to daphnia And other aquatic Invertebrates	static test EC50 – Daphnia magna (Water flea) – 15.4 mg/l – 48h (OECD Test Guidelines 202)
Toxicity to algae	static test ErC50 – Desmodesmus subspicatus (green algae) - > 100 mg/l – 72h (OECD Test Guidelines 209)
Toxicity to bacteria	static test EC50 – activated sludge – 510 mg/l – 3h (OECD Test Guideline 209)

12.2 Persistence and degradability
The methods for determining biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment

The substance/ 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.

12.6 Other adverse effects
No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

Use approved government contractor.
Observe all International, National, State and Local environmental laws.

Contaminated packaging
Dispose of as unused product

SECTION 14: Transport information

Limited Quantity – 0.01% per 1ml vial

14.1 UN number

ADR/RID: 1500	IMDG: 1500	IATA: 1500

14.2 UN proper shipping name

ADR/RID: Sodium Nitrite
IMDG: Sodium Nitrite
IATA: Sodium Nitrite

14.3 Transport hazard class(es)

ARD/RID: 5.1 (6.1)	IMDG: 5.1 (6.1)	IATA: 5.1 (6.1)

14.4 Packaging group

ADR/RID: III	IMDG: III	IATA: III

14.5 Environmental hazards

ADR/RID: yes	IMDG Marine pollutant: yes	IATA: no

14.6 Special precautions for user
No data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/ legislation specific for the substances or mixture
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006

National legislation

Seveso III: Directive 2012/18/EU of European	: Acute Toxic
Parliament and council of the Council on the control of	: Oxidizing Liquids and Solids
major-accident hazards involving dangerous substances.	: Environmental Hazards

Other regulations
Observe work restrictions regarding protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Take note of Dir 94/33/EC on the protection of young people at work.

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

H272	May intensify fire; oxidizer
H301	Toxic if swallowed
H319	Causes serious eye irritation
H400	Very toxic to aquatic life

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Genial Helix Ltd and its Affiliates will not be held liable for any damage resulting from handling or from contact with the above product.