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

1.1 Product identifier

DumaReact, Prepacked combustion reactor, filled with catalyst, 1 pc
Article number: 14-0245

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

1.2.1 Relevant uses

Catalyst is in the form of the article

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company

C. Gerhardt GmbH & Co. KG
Cäsariusstraße 97
53639 Königswinter / GERMANY
Phone +49 (0)2223 2999 - 0
Fax +49 (0)2223 2999 - 99
Homepage www.gerhardt.de
E-mail info@gerhardt.de

Address enquiries to

Technical information info@gerhardt.de

Safety Data Sheet sdb@chemiebuero.de (No dispatch of safety data sheets)

Safety data sheets are available from the supplier.

1.4 Emergency telephone number

Company +49 (0) 2223 2999-0 Mo-Fr 8:00 - 16:00

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture [REGULATION (GB) CLP]

Aquatic Acute 1: H400 Very toxic to aquatic life.
Aquatic Chronic 1: H410 Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Hazard pictograms

Signal word WARNING

Hazard statements H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements P273 Avoid release to the environment.
P391 Collect spillage.

2.3 Other hazards

Environmental hazards This 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.

Other hazards The structural design prevents release of the hazardous media contained therein when the unit is used for its intended purpose.
Further hazards were not determined with the current level of knowledge.

SECTION 3: Composition / Information on ingredients

3.1 Substances

not applicable

3.2 Mixtures

The product is a mixture.

Range [%]	Substance
1 - < 5	Copper oxide
	CAS: 1317-38-0, EINECS/ELINCS: 215-269-1, EU-INDEX: 029-016-00-6
	GHS/CLP: Aquatic Acute 1: H400 - Aquatic Chronic 1: H410, M-Factor (acute): 100, M-Factor (chronic): 10

Comment on component parts

For full text of H-statements: see SECTION 16.
Article (according to REACH Art. 3 paragraph 3)
The structural design prevents release of the hazardous media contained therein when the unit is used for its intended purpose.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

Take off contaminated clothing and wash before reuse.

Inhalation

Ensure supply of fresh air.
In the event of symptoms seek medical treatment.

Skin contact

When in contact with the skin, clean with soap and water.
Consult a doctor if skin irritation persists.

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.

Ingestion

Rinse mouth.
Do not induce vomiting.
Never give anything by mouth to an unconscious person.
In the event of symptoms seek medical treatment.

4.2 Most important symptoms and effects, both acute and delayed

None known.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Foam, dry powder, water spray jet, carbon dioxide
Fire extinguishing method of surrounding areas must be considered.

Extinguishing media that must not be used

Full water jet.

5.2 Special hazards arising from the substance or mixture

Risk of formation of toxic pyrolysis products.

5.3 Advice for firefighters

Use self-contained breathing apparatus.

Cool containers at risk with water spray jet.
Fire residues and contaminated firefighting water must be disposed of in accordance within the local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear suitable protective equipment. For personal protection see SECTION 8.

6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater.
In case the product spills into drains/surface waters/groundwater, immediately inform the authorities.

6.3 Methods and material for containment and cleaning up

Take up mechanically. Avoid production of dust.
Dispose of absorbed material in accordance within the regulations (Section 13).

6.4 Reference to other sections

See SECTION 8+13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

The normal safety precautions for handling chemicals must be observed.
Provide suitable vacuuming at the processing area.
Avoid contact with eyes and skin. Use personal protective equipment.

Wash hands before breaks and after work.
Do not eat, drink or smoke when using this product.
Use barrier skin cream.
Take off contaminated clothing and wash before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.

Do not store with combustible and/or organic materials.
Do not store together with acids and alkalies.
Do not store together with food and animal food/diet.

Store in a dry place.

7.3 Specific end use(s)

See product use, SECTION 1.2

SECTION 8: Exposure controls / personal protection

8.1 Control parameters

Ingredients with occupational exposure limits to be monitored (UK)

not relevant

Ingredients with occupational exposure limits to be monitored EU (2004/37/EG)

not relevant

8.2 Exposure controls

Additional advice on system design	Ensure adequate ventilation on workstation.
Eye protection	safety glasses (EN 166:2001)
Hand protection	In full contact: 0,4 mm; butyl rubber, > 120 min (EN 374) The details concerned are recommendations. Please contact the glove supplier for further information.
Skin protection	light protective clothing
Other	Avoid contact with eyes and skin. Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity handled. The resistance of this equipment to chemicals should be ascertained with the respective supplier.
Respiratory protection	If workplace limit values are exceeded or if there is insufficient ventilation: Use Safety mask. (DIN EN 149)
Thermal hazards	none
Delimitation and monitoring of the environmental exposition	Comply with applicable environmental regulations limiting discharge to air, water and soil.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	solid
Form	Solids / granules in the housing
Color	grey
Odor	odourless
Odour threshold	No information available.
pH-value	not applicable
pH-value [1%]	not applicable
Boiling point or initial boiling point and boiling range [°C]	not applicable
Flash point [°C]	not applicable
Flammability	not applicable
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Oxidising properties	not applicable
Vapour pressure/gas pressure [kPa]	not applicable
Density [g/cm³]	No information available.
Relative density	No information available.
Bulk density [kg/m³]	No information available.
Solubility in water	not applicable
Solubility other solvents	No information available.
Partition coefficient n-octanol/water (log value)	not applicable
Kinematic viscosity	not applicable
Relative vapour density	not applicable
Melting point [°C]	No information available.
Auto-ignition temperature [°C]	not self-igniting
Decomposition temperature [°C]	No information available.
Particle characteristics	No information available.

9.2 Other information

none

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reactions known if used as directed.

10.2 Chemical stability

The product is stable under standard conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions known.

10.4 Conditions to avoid

Extremely high or low temperatures.
Sunlight

10.5 Incompatible materials

See SECTION 10.3.

10.6 Hazardous decomposition products

No decomposition if used and stored according to specifications.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute oral toxicity Based on the available information, the classification criteria are not fulfilled.

Substance
Copper oxide, CAS: 1317-38-0
LD50, oral, Rat, >2500 mg/kg bw (OECD 423)

Acute dermal toxicity Based on the available information, the classification criteria are not fulfilled.

Substance
Copper oxide, CAS: 1317-38-0
LD50, dermal, Rat, >2000 mg/kg bw (OECD 402)

Acute inhalational toxicity	Based on the available information, the classification criteria are not fulfilled.
Serious eye damage/irritation	Based on the available information, the classification criteria are not fulfilled.
Skin corrosion/irritation	Based on the available information, the classification criteria are not fulfilled.
Respiratory or skin sensitisation	Based on the available information, the classification criteria are not fulfilled.
Specific target organ toxicity — single exposure	Based on the available information, the classification criteria are not fulfilled.
Specific target organ toxicity — repeated exposure	Based on the available information, the classification criteria are not fulfilled.
Mutagenicity	Based on the available information, the classification criteria are not fulfilled.
Reproduction toxicity	Based on the available information, the classification criteria are not fulfilled.
Carcinogenicity	Based on the available information, the classification criteria are not fulfilled.
Aspiration hazard	Based on the available information, the classification criteria are not fulfilled.
General remarks	
	Toxicological data of complete product are not available.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

11.2.2 Other information none

SECTION 12: Ecological information

12.1 Toxicity

Substance
Copper oxide, CAS: 1317-38-0
LC50, (96h), Pimephales promelas, 193 µg/L
LC50, (48h), Daphnia magna, 9,8 µg/L
NOEC, (8d), Ceriodaphnia spec., 10 µg/L
NOEC, (10d), Chlamydomonas reinhardtii, 22 µg/L (OECD 201)
NOEC, (35d), Pimephales promelas, 66 µg/L (OECD 204)

12.2 Persistence and degradability

Behaviour in environment compartments No information available.

Behaviour in sewage plant No information available.

Biological degradability

Substance
Copper oxide, CAS: 1317-38-0
The methods for determining the boilogical degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

Based on all available information not to be classified as PBT or vPvB respectively.

12.6 Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Do not discharge product unmonitored into the environment or into the drainage.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

Product

Dispose of as hazardous waste.

Waste no. (recommended) 060315*

Contaminated packaging

Contaminated packing should be disposed of as product waste.

Waste no. (recommended) 150110* packaging containing residues of or contaminated by hazardous substances

SECTION 14: Transport information

14.1 UN number or ID number

Transport by land according to ADR/RID	3077
Inland navigation (ADN)	3077
Marine transport in accordance with IMDG	3077
Air transport in accordance with IATA	3077

14.2 UN proper shipping name

Transport by land according to ADR/RID	Environmentally hazardous substance, solid, n.o.s. (copper oxide)
- Classification Code	M7
- Label	
- ADR LQ	5 kg
- ADR 1.1.3.6 (8.6)	Transport category (tunnel restriction code) 3 (-)
Inland navigation (ADN)	Environmentally hazardous substance, solid, n.o.s. (copper oxide)
- Classification Code	M7
- Label	
Marine transport in accordance with IMDG	Environmentally hazardous substance, solid, n.o.s. (copper oxide)
- EMS	F-A, S-F
- Label	
- IMDG LQ	5 kg
Air transport in accordance with IATA	Environmentally hazardous substance, solid, n.o.s. (copper oxide)
- Label	

14.3 Transport hazard class(es)

Transport by land according to ADR/RID	9 (N)
Inland navigation (ADN)	9 (N)
Marine transport in accordance with IMDG	9
Air transport in accordance with IATA	9

14.4 Packing group

Transport by land according to ADR/RID	III
Inland navigation (ADN)	III
Marine transport in accordance with IMDG	III
Air transport in accordance with IATA	III

14.5 Environmental hazards

Transport by land according to ADR/RID	yes
Inland navigation (ADN)	yes
Marine transport in accordance with IMDG	MARINE POLLUTANT
Air transport in accordance with IATA	yes

14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

14.7 Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information

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

EEC-REGULATIONS	2008/98/EG (2000/532/EC); 2010/75/EU; 2004/42/EG; (EG) 648/2004; (EC) 1907/2006 (REACH); (EU) 1272/2008; 75/324/EWG ((EC) 2016/2037); (EU) 2020/878; (EU) 2016/131; (EU) 517/2014; (EU) 2019/1148; (EU) 2019/1021, (EU) 2023/707
- Comment on component parts	Substances of Very High Concern - SVHC: substances are not contained or are below 0.1%.
- Annex XIV (REACH)	According to Annex XIV of Regulation (EC) 1907/2006 (REACH) the product does not contain any substances ≥ 0.1% that are subject to authorisation.
- Annex XVII (REACH)	According to Annex XVII of Regulation (EC) 1907/2006 (REACH) the product does not contain any substances ≥ 0.1% that are restricted. According to Annex XVII of Regulation (EC) 1907/2006 (REACH) the product is not subject to any restrictions.
TRANSPORT-REGULATIONS	ADR (2023); IMDG-Code (2023, 41. Amdt.); IATA-DGR (2024)
NATIONAL REGULATIONS (UK):	EH40/2005 Workplace exposure limits (Second edition, published December 2011); UK REACH; GB CLP.
- Observe employment restrictions for people	SEVESO III (Directive 2012/18/EU), Hazard categories in accordance with Regulation (EC) No 1272/2008: E1 ENVIRONMENTAL HAZARDS
- VOC (2010/75/CE)	0 %

15.2 Chemical safety assessment

not applicable

SECTION 16: Other information

16.1 Hazard statements (SECTION 3)

H410 Very toxic to aquatic life with long lasting effects.
H400 Very toxic to aquatic life.

16.2 Abbreviations and acronyms:

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses
ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
ATE = acute toxicity estimate
CAS = Chemical Abstracts Service
CLP = Classification, Labelling and Packaging
DMEL = Derived Minimum Effect Level
DNEL = Derived No Effect Level
EC50 = Median effective concentration
ECB = European Chemicals Bureau
EEC = European Economic Community
EINECS = European Inventory of Existing Commercial Chemical Substances
EL50 = Median effective loading
ELINCS = European List of Notified Chemical Substances
EmS = Emergency Schedules
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IC50 = Inhibition concentration, 50%
IMDG = International Maritime Code for Dangerous Goods
IUCLID = International Uniform ChemicaL Information Database
IVIS = In vitro irritation score
LC50 = Lethal concentration, 50%
LD50 = Median lethal dose
LC0 = lethal concentration, 0%
LOAEL = lowest-observed-adverse-effect level
LL50 = Median lethal loading
LQ = Limited Quantities
MARPOL = International Convention for the Prevention of Marine Pollution from Ships
NOAEL = No Observed Adverse Effect Level
NOEC = No Observed Effect Concentration
PBT = Persistent, Bioaccumulative and Toxic substance
PNEC = Predicted No-Effect Concentration
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
STP = Sewage Treatment Plant
TLV®/TWA = Threshold limit value – time-weighted average
TLV®STEL = Threshold limit value – short-time exposure limit
VOC = Volatile Organic Compounds
vPvB = very Persistent and very Bioaccumulative

16.3 Other information

Classification procedure

Aquatic Acute 1: H400 Very toxic to aquatic life. (Calculation method)
Aquatic Chronic 1: H410 Very toxic to aquatic life with long lasting effects. (Calculation method)

Modified position

2.1, 2.2, 2.3, 7.2, 11.2, 12.6, 15.1