

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

1.1. Product identifier

Product form : Mixture
Trade name : COMCAT Nd-FC20/G2

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Catalyst for Ziegler-Natta Polymerisations

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Only Representative
Intertek Deutschland GmbH
Stangenstrasse 1
70771 Leinfelden-Echterdingen
T +49 711 27311-152 - F +49 711 27311-559
REACH-OR.de@intertek.de

Manufacturer
COMAR Chemicals (Pty) Ltd
Neil Hare Road
Atlantis Industrial 7350
Cape Town
South Africa
Tel : (+27) 21 577-1333
Fax : (+27) 21 577-1343
e-mail : info@comarchem.co.za
www.comarchem.com

1.4. Emergency telephone number

Emergency number : +27 827 740 071 / +27 215 771 333 / +27 825 774 766

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Flammable liquids Category 2	H225
Substances and Mixtures which, in contact with water, emit flammable gases, Category 1	H260
Skin corrosion/irritation Category 1B	H314
Reproductive toxicity, Category 2	H361
Specific target organ toxicity (single exposure) Category 3	H336
Specific target organ toxicity (repeated exposure) Category 2	H373
Aspiration hazard, Category 1	H304
Hazardous to the aquatic environment — Chronic Hazard, Category 2	H411

Full text of H statements : see section 16

2.2. Label elements

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

Hazard pictograms (CLP) :



GHS02

GHS05

GHS07

GHS08

GHS09

Signal word (CLP) :

Danger

Hazardous ingredients

: Reaction products of Neodymium (III) salt of C10-branched carboxylic acid,

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Hazard statements (CLP)

hydrido(diisobutyl)aluminium, di- μ -chloro(chloro)triethylaluminium and buta-1,3-diene

: H225 - Highly flammable liquid and vapour
H260 - In contact with water releases flammable gases which may ignite spontaneously
H304 - May be fatal if swallowed and enters airways
H314 - Causes severe skin burns and eye damage
H336 - May cause drowsiness or dizziness
H361 - Suspected of damaging fertility or the unborn child
H373 - May cause damage to organs through prolonged or repeated exposure
H411 - Toxic to aquatic life with long lasting effects

Precautionary statements (CLP)

: P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P223 - Do not allow contact with water
P231+P232 - Handle under inert gas. Protect from moisture
P233 - Keep container tightly closed

NFPA Classification



Health Hazard: 3
Fire Hazard: 3
Reactivity Hazard: 3
Specific Hazards: 3

HMIS Classification

Health Hazard: 3
Flammability: 3
Reactivity: 3

2.3. Other hazards

No additional information available

SECTION 3 : Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Naphtha (Petroleum), Hydrotreated Light	EC No: 265-151-9 CAS No: 64742-49-0	70 - 80	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Repr. 2, H361 STOT SE 3, H336 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
Reaction products of Neodymium (III) salt of C10-branched carboxylic acid, hydrido(diisobutyl)aluminium, di- μ -chloro(chloro)triethylaluminium and buta-1,3-diene	(CAS No) Not available yet (EC no) 942-526-1 (REACH-no) 01-2120091561-57	20 - 30	Pyr. Liq. 1, H250 Water-react. 1, H260 Skin Corr. 1B, H314

Full text of H-statements: see section 16

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SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical advice/attention if you feel unwell.
- First-aid measures after skin contact : For even minor contact, immediately remove contaminated clothing. Wash skin thoroughly with mild soap and water. If skin irritation occurs: Get medical advice/attention.
- First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical advice.
- First-aid measures after ingestion : IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Remove casualty to fresh air and keep warm and at rest. Give water to drink if victim completely conscious/alert. Never give anything by mouth to an unconscious person. If unconscious place in recovery position and seek medical advice.

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

- Symptoms/injuries after skin contact : Causes severe skin burns and eye damage.
- Symptoms/injuries after eye contact : Causes serious eye damage.
- Symptoms/injuries after ingestion : Aspiration hazard.
- Chronic symptoms : Causes damage to organs through prolonged or repeated exposure.

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Powder. Sand. Carbon dioxide (CO₂).
- Unsuitable extinguishing media : Do not use water jet. Foam.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Beware of reignition. In contact with water releases flammable gases which may ignite spontaneously.
- Hazardous decomposition products in case of fire : carbon oxides (CO and CO₂). Toxic fumes may be released.

5.3. Advice for firefighters

- Precautionary measures fire : Evacuate area. Evacuate the personnel away from the fumes. No action shall be taken involving any personal risk or without suitable training. Move undamaged containers from immediate hazard area if it can be done safely.
- Protective equipment for firefighters : Extra personal protection: complete protective clothing including self-contained breathing apparatus. Full face piece respirator.
- Other information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. No flames, no sparks. Eliminate all sources of ignition. Do not breathe gas/vapour.

6.1.2. For emergency responders

- Protective equipment : Wear protective clothing as described in Section 8 of this safety data sheet.
- Emergency procedures : Evacuate unnecessary personnel. No action shall be taken involving any personal risk or without suitable training. Exclude sources of ignition and ventilate the area. Avoid breathing mist or vapour.

6.2. Environmental precautions

Avoid release to the environment. Avoid sub-soil penetration. Avoid contact with water. Relevant water authorities should be notified of any large spillage to water course or drain. Toxic to aquatic life.

6.3. Methods and material for containment and cleaning up

- For containment : Stop leak, if possible without risk. Move undamaged containers from immediate hazard area if it can be done safely.
- Methods for cleaning up : Contain and/or absorb spill with inert material (sand, vermiculite or other appropriate material), then place in suitable container. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Contaminated absorbent material may pose the same hazard as the spilled product.

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Other information : Concerning disposal elimination after cleaning, see section 13. see Section 1 for emergency contact information.

6.4. Reference to other sections

For further information refer to section 8 : Exposure-controls/personal protection. For disposal of residues refer to section 13: Disposal considerations". See Section 1 for emergency contact information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Keep away from any possible contact with water, because of violent reaction and possible flash fire. Avoid release to the environment. Spontaneously flammable in air. Avoid breathing dust/fume/gas/mist/vapours/spray.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands and face immediately after handling this product, and once again before leaving the workplace.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Prevent the build-up of electrostatic charge.
Use explosion-proof electrical/ventilating/lighting/.../ equipment. Provide grounding of containers, equipment, pumps and ventilation facilities.

Storage conditions : For **QUALITY integrity related purposes**, keep container stored at maximum -18 degrees celcius under dry inert conditions (nitrogen).

For **SAFETY and HAZARD related purposes**:

- store in original container.
- Keep product away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep the container hermetically sealed. Protect from moisture and air.
- There are no **hazard threats** if the product reaches ambient temperatures.

Storage area : Store in a place accessible by authorized persons only.
Store in a designated area where 400V AC power supply is available, plug in power cable for Isotainer refrigeration system, and monitor operation thereof.

Store in dry ice or cold-boxes for samples.

Packaging materials : Store always product in container of same material as original container.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Components with limit values that require monitoring at the workplace:

The product does contain hexanes with critical values that have to be monitored at the workplace.

Relevant exposure limits are:

n-Hexane:

ACGIH (America)

TLV: 50ppm, 176mg/m³ (8hr TWA)

UK publication EH 40 (Occupational Exposure Standard)

Long-term exposure limit (8-hour TWA) 20ppm, 72mg/ m³

SAIOH (South Africa)

Occupational Exposure Limit – recommended limit (8hr TWA) 20ppm, 70mg/m³

FIOSH (Germany)

(MAK) 50ppm, 180mg/m³

Hexane, all isomers except n-Hexane:

NIOSH (America)

(8hr TWA) 100ppm, 1800mg/m³

SAIOH (South Africa)

Occupational Exposure Limit – recommended limit (8hr TWA) 500ppm, 1800mg/m³

Aluminium-Alkyls:

NOISH (America)

(8hr TWA) 2mg/m³

SAIOH (South Africa)

Occupational Exposure Limit – recommended limit (8hr TWA) 2mg/m³

FIOSH (Germany)

BAT 200ppm

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8.2. Exposure controls

Appropriate engineering controls	: The substance / product is registered with strictly controlled conditions as defined in Article 18(4) of Regulation (EC) No. 1907/2006 (REACH Regulation) and must therefore be handled as such. Refer to the industry guidance prepared by Concawe/Cefic/EFCG for advice on the confirmation of strictly controlled conditions available from: http://cefic.org/templates/shwPublications.asp?HID=750 .
Personal protective equipment	: Gas mask. Gloves. Protective clothing. Face shield.
Hand protection	: Chemical resistant gloves (according to European standard EN 374 or equivalent)
Eye protection	: Safety glasses. Face shield
Respiratory protection	: Approved organic vapour respirator



Environmental exposure controls	: Assure that emissions are compliant with all applicable air pollution control regulations. Use engineering controls to keep exposures below the OEL or DNEL.
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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Clear.
Colour	: green.
Odour	: Hexane.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: 55 - 85 °C
Flash point	: -20 °C (ASTM D-56)
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: 18 kPa @ 20 °C
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: 0,75 kg/l
Solubility	: soluble in most organic solvents. Water: not applicable. Reacts violently with water.
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: 1,2 vol % 8.3 vol %

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts violently with water.

10.2. Chemical stability

Stable under use and storage conditions as recommended in section 7.

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10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Avoid ignition sources. Air. Moisture.

10.5. Incompatible materials

Water.

10.6. Hazardous decomposition products

Metal oxides. Carbon oxides (CO, CO₂).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified
Skin corrosion/irritation	: Causes severe skin burns and eye damage.
Serious eye damage/irritation	: Serious eye damage, category 1, implicit
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Suspected of damaging fertility or the unborn child.
Specific target organ toxicity (single exposure)	: May cause drowsiness or dizziness.
Specific target organ toxicity (repeated exposure)	: May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	: May be fatal if swallowed and enters airways.
Potential Adverse human health effects and symptoms	: Inhalation may affect the nervous system causing headache, possibly dizziness, nausea, weakness, loss of coordination and unconsciousness. Central nervous system depression. May be fatal if swallowed and enters airways. Causes skin irritation. May cause eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	: Disposal must be done according to official regulations. comply with applicable local, national and international regulation. Waste codes / waste designations according to EWC / AVV.
Waste treatment methods	: May be reused following decontamination. Dispose as hazardous waste. Handle uncleaned empty containers as full ones. Empty containers should be taken for recycling, recovery or waste in accordance with local regulation. Recycling is preferred to disposal or incineration.
Waste disposal recommendations	: Handle empty containers with care because residual vapours are flammable. Do not pressurize, cut, weld, braze solder, drill, grind, or expose containers to flames, sparks, heat, or other potential ignition sources. Avoid release to the environment.

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SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No. (ADR)	: 3399
UN-No. (IMDG)	: 3399
UN-No. (IATA)	: 3399
UN-No. (ADN)	: 3399
UN-No. (RID)	: 3399

14.2. UN proper shipping name

Proper Shipping Name (ADR)	: ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE, FLAMMABLE (Neodymium aluminium alkyl mixture in hexanes)
Proper Shipping Name (IMDG)	: ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE, FLAMMABLE (Neodymium aluminium alkyl mixture in hexanes)
Proper Shipping Name (IATA)	: ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE, FLAMMABLE (Neodymium aluminium alkyl mixture in hexanes)
Proper Shipping Name (ADN)	: ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE, FLAMMABLE (Neodymium aluminium alkyl mixture in hexanes)
Proper Shipping Name (RID)	: ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE, FLAMMABLE (Neodymium aluminium alkyl mixture in hexanes)
Transport document description (ADR)	: UN 3399 ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE, FLAMMABLE, 4.3 (3), I, (B/E), (Neodymium aluminium alkyl mixture in hexanes)
Transport document description (IMDG)	: UN 3399 ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE, FLAMMABLE, 4.3 (3), I, (Neodymium aluminium alkyl mixture in hexanes)

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR)	: 4.3 (3)
Danger labels (ADR)	: 4.3, 3



IMDG

Transport hazard class(es) (IMDG)	: 4.3 (3)
Danger labels (IMDG)	: 4.3, 3



IATA

Transport hazard class(es) (IATA)	: 4.3 (3)
Hazard labels (IATA)	: 4.3, 3



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ADN

Transport hazard class(es) (ADN) : 4.3 (3)

Danger labels (ADN) : 4.3, 3



RID

Transport hazard class(es) (RID) : 4.3 (3)

Danger labels (RID) : 4.3, 3



14.4. Packing group

Packing group (ADR) : I

Packing group (IMDG) : I

Packing group (IATA) : I

Packing group (ADN) : I

Packing group (RID) : I

14.5. Environmental hazards

Dangerous for the environment : Yes

Marine pollutant : Yes

Other information : No supplementary information available

14.6. Special precautions for user

- Overland transport

Classification code (ADR) : WF1

Special provisions (ADR) : 274

Limited quantities (ADR) : 0

Excepted quantities (ADR) : E0

Packing instructions (ADR) : P402

Mixed packing provisions (ADR) : MP2

Portable tank and bulk container instructions (ADR) : T13

Portable tank and bulk container special provisions (ADR) : TP2, TP7, TP36, TP41

Tank code (ADR) : L10DH

Tank special provisions (ADR) : TU4, TU14, TU22, TE21, TM2

Vehicle for tank carriage : FL

Transport category (ADR) : 0

Special provisions for carriage - Packages (ADR) : V1

Special provisions for carriage - Loading, unloading and handling (ADR) : CV23

Special provisions for carriage - Operation (ADR) : S2, S20

Hazard identification number (Kemler No.) : X323

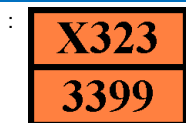
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Orange plates



Tunnel restriction code (ADR) : B/E

EAC code : 4W

APP code : A(fl)

- Transport by sea

Special provisions (IMDG) : 274

Limited quantities (IMDG) : 0

Excepted quantities (IMDG) : E0

Packing instructions (IMDG) : P402

Special packing provisions (IMDG) : PP31

Tank instructions (IMDG) : T13

Tank special provisions (IMDG) : TP2, TP7, TP36

EmS-No. (Fire) : F-G

EmS-No. (Spillage) : S-N

Stowage category (IMDG) : D

Stowage and segregation (IMDG) : Clear of living quarters. 'Separated from' acids.

Properties and observations (IMDG) : Flammable liquid. Reacts violently with moisture, water and acids evolving flammable gas.

MFAG-No : 138

- Air transport

PCA Excepted quantities (IATA) : E0

PCA Limited quantities (IATA) : Forbidden

PCA limited quantity max net quantity (IATA) : Forbidden

PCA packing instructions (IATA) : Forbidden

PCA max net quantity (IATA) : Forbidden

CAO packing instructions (IATA) : 494

CAO max net quantity (IATA) : 1L

Special provisions (IATA) : A3

ERG code (IATA) : 4FW

- Inland waterway transport

No data available

- Rail transport

No data available

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

15.1.2. National regulations

Germany

VwVwS Annex reference : Water hazard class (WGK) 3, severe hazard to waters (Classification according to VwVwS, Annex 4)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Subject of the 12. BImSchV (Hazardous Incident Ordinance) : Positions: O2, E2 and 34

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Netherlands

SZW-lijst van kankerverwekkende stoffen	: Naphtha (Petroleum), Hydrotreated Light is listed
SZW-lijst van mutagene stoffen	: Naphtha (Petroleum), Hydrotreated Light is listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding	: None of the components are listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid	: None of the components are listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling	: None of the components are listed

Denmark

Classification remarks	: Emergency management guidelines for the storage of flammable liquids must be followed
Recommendations Danish Regulation	: Young people below the age of 18 years are not allowed to use the product Pregnant/breastfeeding women working with the product must not be in direct contact with the product

15.2. Chemical safety assessment

No assessment required - Industrial use as intermediate under strictly controlled conditions

SECTION 16: Other information

Other information	: The substance / product is registered with strictly controlled conditions as defined in Article 18(4) of Regulation (EC) No. 1907/2006 (REACH Regulation) and must therefore be handled as such. Refer to the industry guidance prepared by Concawe/Cefic/EFCG for advice on the confirmation of strictly controlled conditions available from: http://cefic.org/templates/shwPublications.asp?HID=750 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. It is the user's responsibility to take the mentioned precautionary measures and to ensure that this information is complete and sufficient for the use of this product.
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Full text of H- and EUH-statements:

Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Asp. Tox. 1	Aspiration hazard, Category 1
Flam. Liq. 2	Flammable liquids Category 2
Pyr. Liq. 1	Pyrophoric Liquids, Category 1
Repr. 2	Reproductive toxicity, Category 2
Skin Corr. 1B	Skin corrosion/irritation Category 1B
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT RE 2	Specific target organ toxicity (repeated exposure) Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
Water-react. 1	Substances and Mixtures which, in contact with water, emit flammable gases, Category 1
H225	Highly flammable liquid and vapour
H250	Catches fire spontaneously if exposed to air
H260	In contact with water releases flammable gases which may ignite spontaneously
H304	May be fatal if swallowed and enters airways
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H336	May cause drowsiness or dizziness
H361	Suspected of damaging fertility or the unborn child
H373	May cause damage to organs through prolonged or repeated exposure
H411	Toxic to aquatic life with long lasting effects

Last Version: 15 (26/09/2018)

Reason for change: Amended Sections 3 and 9.

SDS EU (REACH Annex II)

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