1. MATERIAL IDENTIFICATION

Product name

R190 B

Recommended use and use restriction

- General use: Epoxy curing agent
- Use restriction: Not available

No. C.A.S.

9046-10-0

Company Name:

- Company: Forza Inc
- Adress: 3211 Nebraska Ave, Suite 300, Council Bluffs, IA 51501
- Telephone number: 4027319300
- Emergency telephone number: Chemtrec:18004249300

2. HAZARDS IDENTIFICATION

GHS classification

- Skin corrosion/irritation - Category 1C
- Serious eye damage/eye irritation - Category 1
- Hazardous to the aquatic environment (acute) – Category 3
- Hazardous to the aquatic environment (chronic) – Category 3

GHS label elements

Hazard pictograms/symbols

SIGNAL WORD: DANGER

- **Hazard statements**

  - H314: Causes severe skin burns and eye damage.
  - H402: Harmful to aquatic life.
  - H411: Toxic to aquatic life with long lasting effects.

- **Precautionary statements**

  Prevention

  - P260: Do not breathe dust or mist.
  - P264: Wash thoroughly after handling.
  - P273: Avoid release to the environment.
  - P280: Wear protective gloves/protective clothing/eye protection/face protection.

  Response

  - P301+P330+P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
  - P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
  - P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

- P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310: Immediately call a POISON CENTER or doctor/physician.
- P391: Collect spillage.

Storage

- P405: Store locked up.

Disposal.

- P501: Disposal of contents/container to be specified in accordance with regulations.

3. COMPOSITION

Component	CAS No.	Content (%)
Aliphatic amine	NA	>= 90 - >=100
Aggregates	NA	>=10

4. FIRST AID MEASURES

General advice: Seek medical advice. If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately.

Eye contact: Hold eyelids apart, initiate and maintain gentle and continuous irrigation until the patient receives medical care. If medical care is not promptly available, continue to irrigate for one hour.

Skin contact: Immediately remove contaminated clothing, and any extraneous chemical, if possible to do so without delay. Flush immediately with copious amounts of water. Initiate and maintain continuous irrigation until the patient receives medical care. If medical care is not promptly available, continue to irrigate for one hour. Cover wound with sterile dressing. NOTE TO PHYSICIANS: Application of corticosteroid cream has been effective in treating skin irritation.

Ingestion: Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice. Prevent aspiration of vomit. Turn victim's head to the side.

Inhalation: Move to fresh air.

Most important symptoms/effects: Eye disease. Skin disorders and Allergies.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media

- Water spray
- Alcohol-resistant foam.
- Carbon dioxide (CO2).
- Dry powder.

Unsuitable extinguishing media

- Not available.

Special hazards arising from the substance

- Incomplete combustion may form carbon monoxide.
- May generate ammonia gas.
- May generate toxic nitrogen oxide gases.
- Do not allow run-off from firefighting to enter drains or water courses.
- Burning produces noxious and toxic fumes.

- Downwind personnel must be evacuated.

Special protection actions for firefighters

- Avoid contact with the skin.
- A face shield should be worn.
- Wear self contained breathing apparatus for fire fighting if necessary.

Further information

- Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Do not allow run-off from fire fighting to enter drains or water courses.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- Use self-contained breathing apparatus and chemically protective clothing.
- Evacuate personnel to safe areas.
- Avoid inhalation, and contact with the skin, eyes, and clothing.

Enviromental precautions

- Do not allow spill to enter into sewers or waterways.
- Use appropriate containment to avoid environmental contamination.
- Construct a dike to prevent spreading.

Methods for cleaning up

- Spills should be contained, solidified, and placed in suitable containers for disposal. Dispose of absorbed material in accordance with regulations.

Further information

- If possible, stop the flow of the product.

7. HANDLING AND STORAGE

Precautions for safe handling

- Avoid contact with skin and eyes.
- Use personal protective equipment.
- When using, do not eat, drink or smoke.
- Ensure adequate ventilation.
- Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept Handy.

Conditions for safe storage

- Do not store near acids.
- Keep containers tightly closed in a dry, cool and well- ventilated place.
- Protect from temperatures above: 60 °C

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure controls

- ACGIH TLV
  - Not available

Engineering controls

Provide readily accessible eye wash stations and safety showers. Provide natural or explosion-proof ventilation adequate to ensure concentrations are kept below exposure limits.

Ventilation: Normal room ventilation is sufficient, however, mechanical ventilation It provides better results.

Personal protection

- Respiratory protection: Wear respiratory protection if ventilation is inadequate.
- Eye protection: Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.
- Hand protection: Chemical resistant protective gloves.
- Body protection: Head protection
  Rubber or plastic boots.
  Chemical protection suit.

9. PHYSICAL AND CHEMICAL PROPERTIES

A. Appearance	
- Appearance	Liquid
- Color	Black
B. Odor	Amine-like
C. Odor threshold	Not available
D. pH	Not available
E. Melting point / freezing point	Not available
F. Initial boiling point / boiling range	Not available
G. Flammability point	Not available
H. Evaporation rate	Not available
I. Inflammability	Not available
J. Upper / lower flammability limits	Not available
K. Vapor pressure	Not available
L. Solubility	Not available
M. Vapor density	Not available
N. Relative density	Not available
O. Partition coefficient n-octanol / water	Not available
P. Auto-ignition temperature	Not available
Q. Decomposition temperature	Not available
R. Viscosity (kinematic)	4400 - 4600
S. Molecular weight	Not available
T. Flash Point	Not available

10. STABILITY AND REACTIVITY

Chemical Stability

- Stable under normal conditions.

Conditions to avoid

- Avoid all sources of ignition: heat, sparks, open flame.

Materials to avoid

- Reactive metals (e.g. sodium, calcium, zinc etc.). Materials reactive with hydroxyl compounds.
- Organic acids (i.e. acetic acid, citric acid etc.). Mineral acids. Sodium hypochlorite.
- Product slowly corrodes copper, aluminum, zinc and galvanized surfaces.
- Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion.
- Oxidizing agents.

Hazardous decomposition products

- Nitric acid. Ammonia.
- Nitrogen oxides (NOx).
- Nitrogen oxide can react with water vapors to form corrosive nitric acid.
- Carbon monoxide (CO). Carbon dioxide (CO2).
- Aldehydes.
- Flammable hydrocarbon fragments.

11. TOXICOLOGICAL INFORMATION

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity
Assessment of acute toxicity: Of low toxicity after single ingestion. Of low toxicity after short-term skin contact. The inhalation of a highly enriched/saturated vapor-air-mixture represents an unlikely acute hazard.

Oral
Type of value: LD50
Species: rat (male/female)
Value: 2,885 mg/kg (similar to OECD guideline 401)

Inhalation
Type of value: LC0
Species: rat (male/female)
Value: > 0.74 mg/l (IRT) Exposure time: 8 h
No mortality was observed.

Dermal
Type of value: LD50
Species: rabbit (male/female)
Value: 2,980 mg/kg (similar to OECD guideline 402)

Assessment other acute effects
Assessment of STOT single:
Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

Irritation / corrosion
Assessment of irritating effects: Corrosive! Damages skin and eyes.

Skin
Species: rabbit
Result: Corrosive.
Method: similar to OECD guideline 404

Eye
Species: rabbit
Result: Risk of serious damage to eyes.
Method: similar to OECD guideline 405

Sensitization
Assessment of sensitization: No data available. As the substance ís corrosive, conducting sensitization studies is not feasible.

Aspiration Hazard
No aspiration hazard expected.

Chronic Toxicity/Effects

Repeated dose toxicity
Assessment of repeated dose toxicity: No substance-specific organtoxicity was observed after repeated administration to animals. After repeated exposure the prominent effect is local irritation.

Genetic toxicity
Assessment of mutagenicity: No mutagenic effect was found in various tests with mammalian cell culture and mammals. The substance was not mutagenic in bacteria.

Carcinogenicity
Assessment of carcinogenicity: No data available concerning carcinogenic effects.

Reproductive toxicity
Assessment of reproduction toxicity: The results of animal studies gave no indication of a fertility impairing effect. The results were determined in a Screening test (OECD 421/422).

Teratogenicity
Assessment of teratogenicity: No indications of a developmental toxic / teratogenic effect were seen in animal studies. The results were determined in a Screening test (OECD 421/422). Mortality observed in rabbits following oral gavage exposure to this corrosive substance. However, the relevance of this result for humans is unclear. The results are preliminary and do not provide a complete understanding of the effect observed.

Other Information
No experimental evidence available for genotoxicity in vitro (Ames test negative). Literature data.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Aquatic toxicity
Assessment of aquatic toxicity:
Acutely harmful for aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish
LC50 (96 h) > 15 mg/l, Oncorhynchus mykiss (OECD Guideline 203, semistatic)
The details of the toxic effect relate to the nominal concentration. Limit concentration test only (LIMIT test).

LC50 (96 h) 772.14 mg/l, Cyprinodon variegatus (OECD Guideline 203, static)
The details of the toxic effect relate to the nominal concentration.

Aquatic invertebrates
EC50 (48 h) 80 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)
The details of the toxic effect relate to the nominal concentration.
EC50 (48 h) 418.34 mg/l, Arcatia tonsa (Daphnia test acute, static)
The details of the toxic effect relate to the nominal concentration.

Aquatic plants
EC50 (72 h) 15 mg/l (growth rate), Pseudokirchneriella subcapitata (OECD Guideline 201, static)
The details of the toxic effect relate to the nominal concentration.
EC50 (72 h) 141.72 mg/l, Skeletonema costatum (ISO/DIS 10253, static)
The details of the toxic effect relate to the nominal concentration.
No observed effect concentration (72 h) 100 mg/l, Skeletonema costatum (ISO/DIS 10253, static)
The details of the toxic effect relate to the nominal concentration.

Chronic toxicity to fish
No data available regarding toxicity to fish.

Chronic toxicity to aquatic invertebrates
No data available regarding toxicity to daphnids.

Assessment of terrestrial toxicity

No data available concerning terrestrial toxicity.

Microorganisms/Effect on activated sludge

Toxicity to microorganisms
OECD Guideline 209 aerobic activated sludge of a predominantly domestic sewage/EC20 (3 h): 380 mg/l The details of the toxic effect relate to the nominal concentration.

Persistence and degradability

Assessment biodegradation and elimination (H2O)
Not readily biodegradable (by OECD criteria).

Elimination information
0 - 10 % DOC reduction (OECD 301 A (old version)) Poorly eliminated from water.
Poorly biodegradable.

Assessment of stability in water
In contact with water the substance will hydrolyse slowly.

Information on Stability in Water (Hydrolysis)
t1/2 > 1 a (25 °C, pH value 7), (Directive 92/69/EEC, C.7)
In contact with water the substance will hydrolyse slowly.

Assessment photodegration
After evaporation or exposure to the air, the product will be rapidly degraded by photochemical processes.

Photodegradation
t1/2 (Indirect photolysis) 1.6 h; OH radical After evaporation or exposure to the air, the product will be rapidly degraded by photochemical processes.

Bioaccumulative potential

Assessment bioaccumulation potential No significant accumulation in organisms is expected as a result of the distribution coefficient of noctanol/water (log Pow). The product will not be readily bioavailable due to its consistency and insolubility in water.

Mobility

Not available

Other adverse effects

Not available

13. DISPOSAL CONSIDERATIONS

Methods of elimination

Waste from residues/ unused: Contact supplier if guidance is required.

Contaminated packing: Dispose of container and unused contents in accordance with federal, and local requirements.

14. TRANSPORT INFORMATION

UN/ID No. (IMDG)

- UN 2735

Proper shipping name

- Amines, Liquid, Corrosive, N.O.S. (Aliphatic amine)

Class or Division

- 8

Packing group IMDG

- III

Label (s)

- 8

Marine pollutant

- Yes

Special precautions for the user related to transport measures

- Not available

15. REGULATORY INFORMATION

Registration status:
Chemical TSCA, US released / listed

EPCRA 311/312 (Hazard categories): Acute;

NFPA Hazard codes:
Health: 3 Fire: 1 Reactivity:0 Special:

HMIS III rating
Health:3 Flammability:1 Physical hazard: 0

16. OTHER INFORMATION

Date of issue

20/10/2023

Review number and Last date reviewed

0, 20/10/2023

Other

The information is considered correct, but is not exhaustive and will be used only as guidance, which is based on current knowledge of the chemical or mixture and is applicable to the appropriate safety precautions for the product.