

Rapid Ceramic Aircraft

Version number: 1.0

Date of compilation: 11/19/2024

SECTION 1: Identification

1.1 Product identifier

Trade name **AHW-105**

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

Relevant identified uses Professional use

1.3 Details of the supplier of the safety data sheet

NIC Industries, Inc
7050 6th St.
White City Oregon 97503
United States

Telephone: 866-774-7628
e-mail: sds@nicindustries.com
Website: www.nicindustries.com

1.4 Emergency telephone number

Emergency information service 1-800-633-8253 (USA & Canada)

The information contained in this Safety Data Sheet (SDS) is, to the best of our knowledge, true and accurate and presented in good faith. NIC Industries, Inc. makes no warranties, expressed or implied, as to the accuracy and adequacy of this information. Because many factors may affect processing or application/use of this product, this data is offered solely for the user's consideration, investigation and verification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or process. Regulatory requirements are subject to change and may differ from one location to another. It is the responsibility of the buyer/user to ensure its activities comply with all local, state and federal regulations.

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Hazard class and category code(s)

Classification acc. to GHS				
Section	Hazard class	Category	Hazard class and category	Hazard statement
A.45	Skin sensitization	1	Skin Sens. 1	H317

For full text of abbreviations: see SECTION 16.

2.2 Label elements

Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

- Signal word **WARNING**

- Pictograms

GHS07



Rapid Ceramic Aircraft

Version number: 1.0

Date of compilation: 11/19/2024

- Hazard statements

H317 May cause an allergic skin reaction.

- Precautionary statements

P101 If medical advice is needed, have product container or label at hand.
 P102 Keep out of reach of children.
 P103 Read label before use.
 P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
 P272 Contaminated work clothing must not be allowed out of the workplace.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P302+P352 If on skin: Wash with plenty of water.
 P321 Specific treatment (see on this label).
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
 P363 Wash contaminated clothing before reuse.
 P501 Dispose of contents/container to industrial combustion plant.

- Hazardous ingredients for labelling

Ambient Curable Refractory Resin, Curing Agent, Refractory Resin

2.3 Other hazards

This material is combustible, but will not ignite readily.

Results of PBT and vPvB assessment

Does not contain a PBT-/vPvB-substance at a concentration of $\geq 0.1\%$.

Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) in a concentration of $\geq 0.1\%$.

SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture)

3.2 Mixtures

Description of the mixture

Name of substance	Identifier	Wt%
DI Water	CAS No 7732-18-5	≥ 90
70% Isopropanol	CAS No 67-63-0	0.1 – < 1
Acetic Acid 99%	CAS No 64-19-7	0.1 – < 1
Refractory Resin	CAS No Trade Secret	0.1 – < 1
Ambient Curable Refractory Resin	CAS No Trade Secret	0.1 – < 1
Curing Agent	CAS No Trade Secret	0.1 – < 1
Capping Agent	CAS No Trade Secret	0 – < 0.1

Rapid Ceramic Aircraft

Version number: 1.0

Date of compilation: 11/19/2024

Name of substance	Identifier	Wt%
Coupling Agent	CAS No Trade Secret	0 - < 0.1
Catalyst	CAS No Trade Secret	0 - < 0.1
Silicon Based Carrier Solvent	CAS No Trade Secret	0 - < 0.1
Silicon Based Solvent	CAS No Trade Secret	0 - < 0.1

Remarks

** Trade Secret: In accordance with OSHA Hazard Communication Standard 29 CFR 1910.1200(i) and in accordance with the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS), the specific identity and/or exact percentage (concentration) of the composition has been withheld as a "Trade Secret"

SECTION 4: First-aid measures

4.1 Description of first-aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. Provide fresh air.

Following skin contact

Wash with plenty of soap and water.

Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed

None.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Dry extinguishing powder, BC-powder, Carbon dioxide (CO₂)

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

Nitrogen oxides (NO_x)

Rapid Ceramic Aircraft

Version number: 1.0

Date of compilation: 11/19/2024

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Coordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains.

Advice on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: sawdust, kieselgur (diatomite), sand, universal binder.

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

- Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Use only in well-ventilated areas.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Control of the effects

Protect against external exposure, such as

frost

7.3 Specific end use(s)

See section 16 for a general overview.

Rapid Ceramic Aircraft

Version number: 1.0

Date of compilation: 11/19/2024

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)										
Country	Name of substance	Identifier	TWA [ppm]	TWA [mg/m ³]	STEL [ppm]	STEL [mg/m ³]	Ceiling-C [ppm]	Ceiling-C [mg/m ³]	Notation	Source
US	Acetic Acid 99%	PEL (CA)	10	25	15	37	40			Cal/OSHA PEL
US	Acetic Acid 99%	REL	10 (10 h)	25 (10 h)	15	37				NIOSH REL
US	Acetic Acid 99%	TLV®	10		15					ACGIH® 2024
US	Acetic Acid 99%	PEL	10	25						29 CFR 1910.1000
US	70% Isopropanol	TLV®	200		400					ACGIH® 2024
US	70% Isopropanol	PEL (CA)	400	980	500	1,225				Cal/OSHA PEL
US	70% Isopropanol	REL	400 (10 h)	980 (10 h)	500	1,225				NIOSH REL
US	70% Isopropanol	PEL	400	980						29 CFR 1910.1000

Notation

- Ceiling-C ceiling value is a limit value above which exposure should not occur
- STEL short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)
- TWA time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Skin protection

- Hand protection

Wear protective gloves.

- Other protection measures

Wash hands thoroughly after handling.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Rapid Ceramic Aircraft

Version number: 1.0

Date of compilation: 11/19/2024

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	Liquid
Color	White
Particle	Not relevant (liquid)
Particle size	Not available
Odor	Characteristic

Other safety parameters

pH (value)	4
Melting point/freezing point	0 °C
Initial boiling point and boiling range	100 °C
Flash point	>90 °C
Evaporation rate	Not determined
Flammability (solid, gas)	Not relevant (fluid)
Explosive limits	Not determined
Vapor pressure	Not determined
Density	0.99 g/cm ³
Vapor density	Not available
Relative density	Not available
Solubility(ies)	Not determined

Partition coefficient

- n-octanol/water (log KOW)	Not available
Auto-ignition temperature	Not determined
Decomposition temperature	Not relevant

Viscosity Not determined

Rapid Ceramic Aircraft

Version number: 1.0

Date of compilation: 11/19/2024

- Kinematic viscosity	Not determined
Explosive properties	None
Oxidizing properties	None

Hazard classes acc. to GHS (Physical hazards): Not relevant

Flammable liquids

- Sustained combustibility No

9.2 Other information	There is no additional information
------------------------------	------------------------------------

SECTION 10: Stability and reactivity

10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

10.2 Chemical stability

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

10.5 Incompatible materials

There is no additional information.

10.6 Hazardous decomposition products

Carbon dioxide, carbon monoxide, and silicon oxides may be produced from all coating formulations. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Acute toxicity

Shall not be classified as acutely toxic.

Acute toxicity estimate (ATE) of components			
Name of substance	CAS No	Exposure route	ATE
Ambient Curable Refractory Resin	Trade Secret	Oral	2,000 mg/kg
Refractory Resin	Trade Secret	Oral	>300 mg/kg
Curing Agent	Trade Secret	Oral	500 mg/kg

Rapid Ceramic Aircraft

Version number: 1.0

Date of compilation: 11/19/2024

Acute toxicity estimate (ATE) of components			
Name of substance	CAS No	Exposure route	ATE
Capping Agent	Trade Secret	Oral	851 mg/kg
Capping Agent	Trade Secret	Dermal	547 mg/kg
Silicon Based Solvent	Trade Secret	Dermal	>2,000 mg/kg
Silicon Based Solvent	Trade Secret	Inhalation: dust/mist	8.67 mg/l/4h

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitization

May cause an allergic skin reaction.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans		
Name of substance	Classification	Number
70% Isopropanol	3	

Legend

3 Not classifiable as to carcinogenicity in humans

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

SECTION 12: Ecological information

12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

12.2 Persistence and degradability

Data are not available.

12.3 Bioaccumulative potential

Data are not available.

Rapid Ceramic Aircraft

Version number: 1.0

Date of compilation: 11/19/2024

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Does not contain a PBT-/vPvB-substance at a concentration of $\geq 0.1\%$.

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) in a concentration of $\geq 0.1\%$.

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product/packaging disposal

Do not empty into drains. Avoid release to the environment. Contact a licensed professional waste disposal service to dispose of this material and its packaging.

Waste treatment of containers/packages

Follow all local, state, and Federal disposal regulations.

Hazardous waste code(s)

The waste code(s) should be assigned in discussion between the user and the waste disposal company.

SECTION 14: Transport information

14.1 UN number

not subject to transport regulations

14.2 UN proper shipping name

not relevant

14.3 Transport hazard class(es)

none

14.4 Packing group

not assigned

14.5 Environmental hazards

non-environmentally hazardous acc. to the dangerous goods regulations

14.6 Remarks

14.7 Transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations

Transport of dangerous goods by road or rail (49 CFR US DOT) - Additional information

Not subject to transport regulations.

International Maritime Dangerous Goods Code (IMDG) - Additional information

Not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Not subject to ICAO-IATA.

Rapid Ceramic Aircraft

Version number: 1.0

Date of compilation: 11/19/2024

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

National regulations (United States)

Toxic Substance Control Act (TSCA)

All ingredients are listed

Superfund Amendment and Reauthorization Act (SARA TITLE III)

- The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)

Please contact sds@nicindustries.com for more information.

- Specific Toxic Chemical Listings (EPCRA Section 313)

Please contact sds@nicindustries.com for more information.

Toxics Release Inventory: Specific Toxic Chemical Listings

Name of substance	Effective date
70% Isopropanol	12/31/1986

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

- List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)

Please contact sds@nicindustries.com for more information.

Name of substance	Statutory code	Final RQ pounds (Kg)
Acetic Acid 99%	1	5000 (2270)

Legend

1 "1" indicates that the statutory source is section 311(b)(2) of the Clean Water Act

Clean Air Act

Please contact sds@nicindustries.com for more information.

Right to Know Hazardous Substance List

- Toxic or Hazardous Substance List (MA-TURA)

Name of substance	PBT / HHS / LHS	De Minimis Concentration Threshold
Acetic Acid 99%		1.0 %
70% Isopropanol		1.0 %

- Hazardous Substance List (NJ-RTK)

Name of substance	Classifications
Capping Agent	CO F3 R1
Acetic Acid 99%	CO F2

Rapid Ceramic Aircraft

Version number: 1.0

Date of compilation: 11/19/2024

Name of substance	Classifications
70% Isopropanol	F3

Legend

- CO Corrosive
- F2 Flammable - Second Degree
- F3 Flammable - Third Degree
- R1 Reactive - First Degree

- Hazardous Substance List (Chapter 323) (PA-RTK)

Name of substance	Classification
Acetic Acid 99%	E
70% Isopropanol	E

Legend

- E Environmental hazard

- Hazardous Substance List (RI-RTK)

Name of substance	References
Acetic Acid 99%	T, F
70% Isopropanol	T, F
Catalyst	T

Legend

- F Flammability (NFPA®)
- T Toxicity (ACGIH®)

California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987

None of the ingredients are listed.

VOC content

All Cerakote coatings are VOC compliant under the EPA and have low to no VOC content. To find out the VOC content of an individual coating please contact sds@nicindustries.com for more information.

National inventories

Country	Inventory	Status
AU	AIIC	Not all ingredients are listed
CA	DSL	Not all ingredients are listed
CA	NDSL	Not all ingredients are listed
CN	IECSC	Not all ingredients are listed
EU	ECSI	Not all ingredients are listed
EU	REACH Reg.	Not all ingredients are listed
JP	CSCL-ENCS	Not all ingredients are listed

Rapid Ceramic Aircraft

Version number: 1.0

Date of compilation: 11/19/2024

Country	Inventory	Status
JP	ISHA-ENCS	Not all ingredients are listed
KR	KECI	Not all ingredients are listed
MX	INSQ	Not all ingredients are listed
NZ	NZIoC	Not all ingredients are listed
PH	PICCS	Not all ingredients are listed
TR	CICR	Not all ingredients are listed
TW	TCSI	All ingredients are listed
US	TSCA	All ingredients are listed (ACTIVE)

Legend

- AIIC Australian Inventory of Industrial Chemicals
- CICR Chemical Inventory and Control Regulation
- CSCL-ENCS List of Existing and New Chemical Substances (CSCL-ENCS)
- DSL Domestic Substances List (DSL)
- ECSI EC Substance Inventory (EINECS, ELINCS, NLP)
- IECSC Inventory of Existing Chemical Substances Produced or Imported in China
- INSQ National Inventory of Chemical Substances
- ISHA-ENCS Inventory of Existing and New Chemical Substances (ISHA-ENCS)
- KECI Korea Existing Chemicals Inventory
- NDSL Non-domestic Substances List (NDSL)
- NZIoC New Zealand Inventory of Chemicals
- PICCS Philippine Inventory of Chemicals and Chemical Substances (PICCS)
- REACH Reg. REACH registered substances
- TCSI Taiwan Chemical Substance Inventory
- TSCA Toxic Substance Control Act

15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information, including date of preparation or last revision

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
29 CFR 1910.1000	29 CFR 1910.1000, Tables Z-1, Z-2, Z-3 - Occupational Safety and Health Standards: Toxic and Hazardous Substances (permissible exposure limits)
49 CFR US DOT	49 CFR U.S. Department of Transportation
ACGIH®	American Conference of Governmental Industrial Hygienists
ACGIH® 2024	From ACGIH®, 2024 TLVs® and BEIs® Book. Copyright 2024. Reprinted with permission. Information on the proper use of the TLVs® and BEIs®: http://www.acgih.org/tlv-bei-guidelines/policies-procedures-presentations/tlv-bei-position-statement
ATE	Acute Toxicity Estimate
Cal/OSHA PEL	California Division of Occupational Safety and Health (Cal/OSHA): Permissible Exposure Limits (PELs)
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	Ceiling value

Rapid Ceramic Aircraft

Version number: 1.0

Date of compilation: 11/19/2024

Abbr.	Descriptions of used abbreviations
DGR	Dangerous Goods Regulations (see IATA/DGR)
ED	Endocrine disruptor
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
HHS	Higher hazard substance
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
LHS	Lower hazard substance
NFPA®	National Fire Protection Association (United States)
NIOSH REL	National Institute for Occupational Safety and Health (NIOSH): Recommended Exposure Limits (RELs)
NLP	No-Longer Polymer
OSHA	Occupational Safety and Health Administration (United States)
PBT	Persistent, Bioaccumulative and Toxic
PEL	Permissible exposure limit
ppm	Parts per million
RTECS	Registry of Toxic Effects of Chemical Substances (database of NIOSH with toxicological information)
STEL	Short-term exposure limit
TLV®	Threshold Limit Values
TWA	Time-weighted average
VOC	Volatile Organic Compounds
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

OSHA Hazard Communication Standard (HCS), 29 CFR 1910.1200.

Transport of dangerous goods by road or rail (49 CFR US DOT). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

Physical and chemical properties: The classification is based on tested mixture.

Health hazards, Environmental hazards: The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H317	May cause an allergic skin reaction.