SAFETY DATA SHEET

1. Identification

Product identifier NT™ Precision Cleaner

Other means of identification

02205 Product code

Recommended use Precision electronics cleaner

Recommended restrictions None known

Manufacturer/Importer/Supplier/Distributor information

Manufactured or sold by:

CRC Industries, Inc. Company name **Address**

885 Louis Dr.

Telephone

General Information 215-674-4300 **Technical** 800-521-3168

Assistance

800-272-4620 **Customer Service** 24-Hour Emergency 800-424-9300 (US)

(CHEMTREC) 703-527-3887 (International) Website www.crcindustries.com

2. Hazard(s) identification

Physical hazards Flammable aerosols Category 2

Warminster, PA 18974 US

Gases under pressure Compressed gas

Health hazards Acute toxicity, oral Category 4

Serious eye damage/eye irritation Category 2A

Specific target organ toxicity, single exposure Category 3 narcotic effects

Aspiration hazard

Hazardous to the aquatic environment,

Environmental hazards

long-term hazard

OSHA defined hazards Not classified.

Label elements



Signal word

Flammable aerosol. Contains gas under pressure; may explode if heated. Harmful if swallowed. **Hazard statement**

May be fatal if swallowed and enters airways. Causes serious eye irritation. May cause

drowsiness or dizziness. Harmful to aquatic life with long lasting effects.

Precautionary statement

Prevention Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open

> flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Use with adequate ventilation. Open doors and windows or use other means to ensure a fresh air supply during use and while product is drying. If you experience any symptoms listed on this label, increase ventilation or leave the area. Avoid breathing gas, mist or vapor. Do not eat, drink or smoke when using this product. Wear protective gloves and eye/face protection. Wash hands

Category 1

Category 3

thoroughly after handling. Avoid release to the environment.

Response If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. Rinse mouth. If

inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get

Storage Store in a well-ventilated place. Store locked up. Protect from sunlight. Do not expose to

temperatures exceeding 50°C/122°F. Exposure to high temperature may cause can to burst.

Disposal Dispose of contents/container in accordance with local/regional/national regulations.

Material name: NT™ Precision Cleaner 1716 Version #: 01 Issue date: 02-04-2014

Hazard(s) not otherwise classified (HNOC)

None known.

Supplemental information

35.61% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment. When exposed to extreme heat or hot surfaces, vapors may decompose to harmful or fatal corrosive gases such as hydrogen fluoride, hydrogen chloride and possibly phospene.

3. Composition/information on ingredients

Mixtures Chemical name Common name and synonyms **CAS** number % COzol® 201 Proprietary 80 - 90 Carbon dioxide 124-38-9 5 - 10 Decafluoropentane HFC 43-10mee 138495-42-8 5 - 10 COzol® 202 Proprietary 1 - 3 Methanol 67-56-1 < 0.2

Specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Do NOT give epinephrine (adrenaline). Call a POISON CENTER or doctor/physician.
Skin contact	Rinse skin with water/shower. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Aspiration may cause pulmonary edema and pneumonitis. Immediately give 2 glasses of water. Do NOT give stimulants. Never give anything by mouth to a victim who is unconscious or is having convulsions.

Most important symptoms/effects, acute and delayed

Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. May cause drowsiness or dizziness.

Indication of immediate medical attention and special treatment needed

Because of possible disturbances of cardiac rhythm, catecholamine drugs such as adrenaline should be used with special caution and only in situations of emergency life support. Provide general supportive measures and treat symptomatically. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

General information

Ingestion

In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Unsuitable extinguishing media Powder. Water. Water spray. Foam. Carbon dioxide (CO2).

None known.

Specific hazards arising from the chemical

Contents under pressure. Pressurized container may explode when exposed to heat or flame. When exposed to extreme heat or hot surfaces, vapors may decompose to harmful or fatal corrosive gases such as hydrogen fluoride, hydrogen chloride and possibly phosgene.

Special protective equipment and precautions for firefighters

Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Fire-fighting equipment/instructions

In case of fire: Stop leak if safe to do so. Move containers from fire area if you can do so without risk. Containers should be cooled with water to prevent vapor pressure build up. In the event of fire, cool tanks with water spray.

General fire hazards Flammable aerosol.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid inhalation of vapors or mists. Avoid breathing gas. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. This product is miscible in water. Stop the flow of material, if this is without risk. Collect spillage. Dike far ahead of spill for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Prevent entry into waterways, sewer, basements or confined areas. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground. Use appropriate containment to avoid environmental contamination.

7. Handling and storage

Precautions for safe handling

Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Use caution around energized equipment. The metal container will conduct electricity if it contacts a live source. This may result in injury to the user from electrical shock and/or flash fire. Do not taste or swallow. Avoid breathing mist or vapor. Avoid breathing gas. Avoid contact with eyes. Avoid prolonged exposure. Use only in well-ventilated areas. Wear appropriate personal protective equipment. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Observe good industrial hygiene practices. Avoid release to the environment. Do not empty into drains. For product usage instructions, please see the product label.

Conditions for safe storage, including any incompatibilities

Level 1 Aerosol.

Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122°F. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Keep out of the reach of children.

8. Exposure controls/personal protection

Components	Туре	Value	
Carbon dioxide (CAS 124-38-9)	PEL	9000 mg/m3	
·		5000 ppm	
Methanol (CAS 67-56-1)	PEL	260 mg/m3	
		200 ppm	
Trans-1,2-dichloroethylene (CAS 156-60-5)	PEL	790 mg/m3	
		200 ppm	
US. ACGIH Threshold Limit Value	8		
Components	Туре	Value	
Carbon dioxide (CAS 124-38-9)	STEL	30000 ppm	
,	TWA	5000 ppm	
Methanol (CAS 67-56-1)	STEL	250 ppm	
	TWA	200 ppm	
Trans-1,2-dichloroethylene (CAS 156-60-5)	TWA	200 ppm	
US. NIOSH: Pocket Guide to Chen	nical Hazards		
Components	Туре	Value	
Carbon dioxide (CAS 124-38-9)	STEL	54000 mg/m3	
		30000 ppm	
	TWA	9000 mg/m3	
		5000 ppm	
Methanol (CAS 67-56-1)	STEL	325 mg/m3	
		250 ppm	
	TWA	260 mg/m3	
		200 ppm	
Trans-1,2-dichloroethylene (CAS 156-60-5)	TWA	790 mg/m3	
		200 ppm	

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time	
Methanol (CAS 67-56-1)	15 mg/l	Methanol	Urine	*	

^{* -} For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

Methanol (CAS 67-56-1)

Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Methanol (CAS 67-56-1) Skin designation applies.

US - Tennesse OELs: Skin designation

Methanol (CAS 67-56-1)

Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Methanol (CAS 67-56-1)

Can be absorbed through the skin.

US NIOSH Pocket Guide to Chemical Hazards: Skin designation

Methanol (CAS 67-56-1)

Can be absorbed through the skin.

Appropriate engineering

controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear protective gloves such as: Nitrile. Neoprene. Polyvinyl alcohol (PVA). Viton®.

Other Wear appropriate chemical resistant clothing.

Respiratory protection Wear positive pressure self-contained breathing apparatus (SCBA). Air monitoring is needed to

determine actual employee exposure levels.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely

wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state Liquid.
Form Aerosol.

Color Clear. Colorless.

Odor Slight ethereal.

Odor threshold Not available.

pH Not available.

Melting point/freezing point -112 °F (-80 °C) estimated Initial boiling point and boiling 104.2 °F (40.1 °C) estimated

range

Flash point

None (Tag Closed Cup)

Evaporation rate Fast.

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower

2 % estimated

(%)

Flammability limit - upper

(%)

19.9 % estimated

Vapor pressure 3337.6 hPa estimated

Vapor density > 1 (air = 1)

Relative density 1.27 estimated

Solubility (water) Slight.

Partition coefficient Not available.

(n-octanol/water)

Material name: NT™ Precision Cleaner

loonor

860 °F (460 °C) estimated **Auto-ignition temperature**

Decomposition temperature Not available. Not available. Viscosity (kinematic) Percent volatile 95 % estimated

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

Material is stable under normal conditions Chemical stability

Possibility of hazardous

reactions

No dangerous reaction known under conditions of normal use.

Conditions to avoid Heat, flames and sparks. Contact with incompatible materials. When exposed to extreme heat or

hot surfaces, vapors may decompose to harmful or fatal corrosive gases such as hydrogen

fluoride, hydrogen chloride and possibly phosgene.

Strong oxidizing agents. Strong bases. Strong acids. Caustics. Alkali metals. Alkaline earth metals. Incompatible materials

Powdered metal.

Hazardous decomposition

products

Carbonyl halides. Hydrogen fluoride. Hydrogen chloride. Phosgene. Formaldehyde. Carbon

oxides.

11. Toxicological information

Information on likely routes of exposure

Ingestion Harmful if swallowed. May be fatal if swallowed and enters airways. Ingestion may cause

gastrointestinal irritation, nausea, vomiting and diarrhea.

Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. With high Inhalation

exposure levels, effects can include central nervous system (CNS) depression, unconsciousness and cardiac arrhythmia. Product vapors displace air and can cause suffocation especially in a

confined space.

Prolonged skin contact may cause temporary irritation. Frequent or prolonged contact may defat Skin contact

and dry the skin, leading to discomfort and dermatitis.

Eve contact Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Symptoms of

overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways. Narcotic effects.

Product	Species	Test Results
NT™ Precision Cleaner		
Acute		
Dermal		
LD50	Rabbit	7655.7324 mg/kg estimated
Inhalation		
LC50	Rat	44278.8555 ppm, 4 hours estimated
		950.1813 mg/l, 4 hours estimated
Oral		
LD50	Rat	1663.499 mg/kg estimated
Subchronic		
Inhalation		
LC50	Rat	7352.2656 ppm, 90 days estimated

^{*} Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye

irritation

Causes serious eye irritation.

Respiratory sensitization Not available.

Skin sensitization This product is not expected to cause skin sensitization.

No data available to indicate product or any components present at greater than 0.1% are Germ cell mutagenicity

mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

Not expected to be hazardous by OSHA criteria. Reproductive toxicity

Material name: NT™ Precision Cleaner

Specific target organ toxicity -

single exposure

Narcotic effects.

Specific target organ toxicity -

repeated exposure

Not classified.

Aspiration hazard May be fatal if swallowed and enters airways. If aspirated into lungs during swallowing or vomiting,

may cause chemical pneumonia, pulmonary injury or death.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Harmful to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.			
	Species	Test Results	
EC50	Daphnia	84.7297 mg/l, 48 hours estimated	
LC50	Fish	94.6127 mg/l, 96 hours estimated	
	Species	Test Results	
138495-42-8)			
EC50	Pseudokirchnerella subcapitata	> 120 mg/l, 72 hours	
EC50	Water flea (Daphnia magna)	11.7 mg/l, 48 hours	
LC50	Fathead minnow (Pimephales promelas)	27.2 mg/l, 96 hours	
	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	13.9 mg/l, 96 hours	
	Zebra danio (Danio rerio)	13 mg/l, 96 hours	
NOEC	Water flea (Daphnia magna)	1.72 mg/l, 21 days	
EC50	Water flea (Daphnia magna)	> 10000 mg/l, 48 hours	
LC50	Fathead minnow (Pimephales promelas)	> 100 mg/l, 96 hours	
	EC50 LC50 138495-42-8) EC50 LC50	EC50 Daphnia LC50 Fish Species 138495-42-8) EC50 Pseudokirchnerella subcapitata EC50 Water flea (Daphnia magna) LC50 Fathead minnow (Pimephales promelas) Rainbow trout,donaldson trout (Oncorhynchus mykiss) Zebra danio (Danio rerio) NOEC Water flea (Daphnia magna) EC50 Water flea (Daphnia magna)	

^{*} Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Partition coefficient n-octanol / water (log Kow)

Decafluoropentane 2.7, Pow at 20 °C

Methanol -0.77

Mobility in soil No data available.

Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation

potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal of waste from residues / unused products

The dispensed liquid product is not a RCRA hazardous waste (See 40 CFR Part 261.20 - 261.33). Empty container can be recycled. Consult authorities before disposal. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose in

accordance with all applicable regulations.

Hazardous waste code Not regulated.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

Since emptied containers may retain product residue, follow label warnings even after container is

emptied.

14. Transport information

DOT

UN number UN1950

UN proper shipping name

Transport hazard class(es)

Aerosols, flammable, Limited Quantity

Class 2.1

Material name: NT™ Precision Cleaner 1716 Version #: 01 Issue date: 02-04-2014 Subsidiary risk 2.1 Label(s)

Packing group Not applicable.

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Special provisions Packaging exceptions 306 Packaging non bulk None None Packaging bulk

IATA

UN1950 **UN number**

UN proper shipping name Aerosols, flammable, Limited Quantity

Transport hazard class(es)

Class 2.1 Subsidiary risk

Packing group Not applicable.

Environmental hazards No. **ERG Code**

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Other information

Passenger and cargo

aircraft

Allowed.

Cargo aircraft only

Allowed.

IMDG

UN1950 **UN number**

UN proper shipping name

Transport hazard class(es)

AEROSOLS, LIMITED QUANTITY

2 Class Subsidiary risk

Packing group Not applicable.

Environmental hazards

Nο Marine pollutant

Not available. **FmS**

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication

Standard, 29 CFR 1910.1200.

All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Decafluoropentane (CAS 138495-42-8) 1.0 % One-Time Export Notification only.

SARA 304 Emergency release notification

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Trans-1,2-dichloroethylene (CAS 156-60-5)

CERCLA Hazardous Substances: Reportable quantity

Trans-1,2-dichloroethylene (CAS 156-60-5) 1000 lbs

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act

Not regulated.

(SDWA)

Food and Drug Not regulated.

Administration (FDA)

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Superfund Amendments and Reauthorization Act of 1986 (SARA)

Nο

Section 311/312 Immediate Hazard - Yes
Hazard categories Delayed Hazard - No
Fire Hazard - Yes

Pressure Hazard - Yes Reactivity Hazard - No

SARA 302 Extremely hazardous substance

US state regulations

US. New Jersey RTK - Substances: Listed substance

Carbon dioxide (CAS 124-38-9) Methanol (CAS 67-56-1)

Trans-1,2-dichloroethylene (CAS 156-60-5)

US. Massachusetts RTK - Substance List

Carbon dioxide (CAS 124-38-9)

Trans-1,2-dichloroethylene (CAS 156-60-5)

US. Pennsylvania RTK - Hazardous Substances

Carbon dioxide (CAS 124-38-9) Methanol (CAS 67-56-1)

Trans-1,2-dichloroethylene (CAS 156-60-5)

US. Rhode Island RTK

Methanol (CAS 67-56-1)

Trans-1,2-dichloroethylene (CAS 156-60-5)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

Methanol (CAS 67-56-1) Listed: March 16, 2012

Volatile organic compounds (VOC) regulations

EPA

VOC content (40 CFR

51.100(s))

57.5 %

Consumer products (40 CFR 59, Subpt. C)

Not regulated

Inventory name

State

Consumer products

This product is regulated as an Electronic Cleaner. This product is not compliant to be sold for use

in California. This product is compliant in all other states.

 VOC content (CA)
 95 %

 VOC content (OTC)
 57.5 %

International Inventories

country(s).

Country(s) or region

Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

^{*}A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing

16. Other information, including date of preparation or last revision

Issue date 02-04-2014
Prepared by Allison Cho

On inventory (yes/no)*

Version # 01

CRC # 657B **Further information** Health: 2 **HMIS®** ratings

Flammability: 2 Physical hazard: 1 Personal protection: B

NFPA ratings Health: 2

Flammability: 2 Instability: 1

The information contained in this document applies to this specific material as supplied. It may not Disclaimer

be valid for this material if it is used in combination with any other materials. This information is accurate to the best of CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this (M)SDS consult your supervisor, a health & safety

professional, or CRC Industries.

Material name: NT™ Precision Cleaner

SDS US 1716 Version #: 01 Issue date: 02-04-2014