

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixtures  
Product name : 201C Ninhydrin Spray, 16 oz.  
Product code : 201C

#### 1.2. Recommended use and restrictions on use

Use of the substance/mixture : Latent fingerprint developer

#### 1.3. Supplier

SIRCHIE  
100 Hunter Place  
Youngsville, NC 27596 - USA  
T 919-554-2244; 800-356-7311 - F 919-554-2266; 800-899-8181  
<http://www.sirchie.com>

#### 1.4. Emergency telephone number

Emergency number : 1.800.424.9300  
CHEMTREC: 1.800.424.9300

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS-US classification

Flammable liquids Category 2	H225	Highly flammable liquid and vapour
Serious eye damage/eye irritation Category 2A	H319	Causes serious eye irritation
Germ cell mutagenicity Category 1B	H340	May cause genetic defects
Carcinogenicity Category 1A	H350	May cause cancer

Full text of H statements : see section 16

#### 2.2. GHS Label elements, including precautionary statements

##### GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H225 - Highly flammable liquid and vapour  
H319 - Causes serious eye irritation  
H340 - May cause genetic defects  
H350 - May cause cancer

Precautionary statements (GHS-US) :

P201 - Obtain special instructions before use.  
P202 - Do not handle until all safety precautions have been read and understood.  
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P233 - Keep container tightly closed.  
P240 - Ground/Bond container and receiving equipment  
P241 - Use explosion-proof electrical/ventilating/lighting equipment  
P242 - Use only non-sparking tools.  
P243 - Take precautionary measures against static discharge.  
P264 - Wash hands, forearms and face thoroughly after handling.  
P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

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P308+P313 - If exposed or concerned: Get medical advice/attention.  
P337+P313 - If eye irritation persists: Get medical advice/attention.  
P370+P378 - In case of fire: Use media other than water to extinguish.  
P403+P235 - Store in a well-ventilated place. Keep cool.  
P405 - Store locked up.  
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

### 2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification : Toxicity of this product has not been fully tested.

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	GHS-US classification
Petroleum gases, liquefied, sweetened	(CAS-No.) 68476-86-8	50 - 55	Flam. Gas 1, H220 Muta. 1B, H340 Carc. 1A, H350
xylene, mixture of isomers	(CAS-No.) 1330-20-7	20 - 25	Flam. Liq. 3, H226
ethanol	(CAS-No.) 64-17-5	10 - 15	Flam. Liq. 2, H225
ethyl acetate	(CAS-No.) 141-78-6	10 - 15	Flam. Liq. 2, H225 Eye Irrit. 2A, H319 STOT SE 3, H336
ninhydrine	(CAS-No.) 485-47-2	0.01	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335

Full text of hazard classes and H-statements : see section 16

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).  
First-aid measures after inhalation : Allow victim to breathe fresh air. Allow the victim to rest. Cough.  
First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists. Direct contact with the eyes is likely to be irritating.  
First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

### 4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : Shortness of breath.

### 4.3. Immediate medical attention and special treatment, if necessary

No additional information available

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.  
Unsuitable extinguishing media : Do not use a heavy water stream.

### 5.2. Specific hazards arising from the chemical

Fire hazard : Flammable aerosol. Flammable liquid and vapour. May cause fire or explosion; strong oxidizer.  
Explosion hazard : Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries. May form flammable/explosive vapor-air mixture.  
Reactivity : No reactivity hazard other than the effects described in sub-sections below.

### 5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment. DO NOT fight fire when fire reaches explosives. Evacuate area. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

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Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : No open flames. No smoking. Isolate from fire, if possible, without unnecessary risk. Remove ignition sources. Use special care to avoid static electric charges.

##### 6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

#### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

#### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

#### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapors are flammable. In use, may form flammable vapor-air mixture. Pressurized container: Do not pierce or burn, even after use. Hazardous waste due to potential risk of explosion.

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Do not spray on an open flame or other ignition source. No open flames. No smoking. Take precautionary measures against static discharge. Use only non-sparking tools. Take any precaution to avoid mixing with combustibles.

#### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment.

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Do not expose to temperatures exceeding 50 °C/ 122 °F. Keep in fireproof place. Keep container tightly closed.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight. Heat sources. Combustible materials.

Storage area : Store in a well-ventilated place.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

ninhydrine (485-47-2)		
Not applicable		
ethanol (64-17-5)		
ACGIH	ACGIH STEL (ppm)	1000 ppm
ethyl acetate (141-78-6)		
ACGIH	ACGIH TWA (ppm)	400 ppm
xylene, mixture of isomers (1330-20-7)		
ACGIH	ACGIH TWA (ppm)	100 ppm
ACGIH	ACGIH STEL (ppm)	150 ppm
Petroleum gases, liquefied, sweetened (68476-86-8)		
Not applicable		

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### 8.2. Appropriate engineering controls

No additional information available

### 8.3. Individual protection measures/Personal protective equipment

#### Personal protective equipment:

Dust/aerosol mask. Gloves. Safety glasses. Avoid all unnecessary exposure. Wear fire/flame resistant/retardant clothing.

#### Hand protection:

Wear protective gloves.

#### Eye protection:

Chemical goggles or safety glasses

#### Respiratory protection:

Wear appropriate mask



#### Other information:

Do not eat, drink or smoke during use.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Clear, colorless, volatile liquid.
Color	: Colorless
Odor	: Irritating/pungent odour
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Solubility	: Insoluble in water.
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: May cause fire or explosion; strong oxidizer.

### 9.2. Other information

No additional information available

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### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

No reactivity hazard other than the effects described in sub-sections below.

#### 10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7). Flammable aerosol. Contains gas under pressure; may explode if heated. Extreme risk of explosion by shock, friction, fire or other sources of ignition. Flammable liquid and vapour. May form flammable/explosive vapor-air mixture. May cause fire or explosion; strong oxidizer.

#### 10.3. Possibility of hazardous reactions

Not established.

#### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Heat. Sparks. Open flame. Overheating.

#### 10.5. Incompatible materials

Strong acids. Strong bases.

#### 10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide. May release flammable gases.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity : Not classified

<b>ninhydrine (485-47-2)</b>	
LD50 oral rat	600 mg/kg (Rat)
ATE US (oral)	600.000 mg/kg body weight
<b>ethanol (64-17-5)</b>	
LD50 oral rat	10740 mg/kg body weight (OECD 401: Acute Oral Toxicity, Rat, Male/female, Experimental value)
LD50 dermal rabbit	> 16000 mg/kg (Rabbit, Literature study)
LC50 inhalation rat (mg/l)	117 - 125 mg/l air (Equivalent or similar to OECD 403, 4 h, Rat, Male/female, Experimental value)
<b>ethyl acetate (141-78-6)</b>	
LD50 oral rat	10200 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Female, Experimental value)
LD50 dermal rabbit	> 20000 mg/kg body weight (24 hour cuff method, 24 h, Rabbit, Male, Experimental value)
ATE US (oral)	10200.000 mg/kg body weight
<b>xylene, mixture of isomers (1330-20-7)</b>	
LD50 oral rat	3523 mg/kg body weight (Equivalent or similar to EU Method B.1: Acute Toxicity (Oral), Rat, Male, Experimental value)
ATE US (oral)	3523.000 mg/kg body weight

Skin corrosion/irritation : Not classified  
Serious eye damage/irritation : Causes serious eye irritation.  
Respiratory or skin sensitization : Not classified  
Germ cell mutagenicity : May cause genetic defects.  
Based on available data, the classification criteria are not met  
Carcinogenicity : May cause cancer.

<b>ethanol (64-17-5)</b>	
Additional information	Ethyl alcohol (200 Proof) has been shown to cause cancer in Human and Animals when ingested in volume over time. There is no link to cancer in limited exposure scenarios.

Reproductive toxicity : Not classified  
Based on available data, the classification criteria are not met  
Specific target organ toxicity – single exposure : Not classified

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Specific target organ toxicity – repeated exposure	: Not classified
Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/effects after inhalation	: Shortness of breath.

### SECTION 12: Ecological information

#### 12.1. Toxicity

<b>ethanol (64-17-5)</b>	
LC50 fish 1	14200 mg/l (US EPA, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value)
<b>ethyl acetate (141-78-6)</b>	
LC50 fish 1	230 mg/l (US EPA, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value)
EC50 Daphnia 1	154 mg/l (48 h, Daphnia magna, Literature)
<b>xylene, mixture of isomers (1330-20-7)</b>	
LC50 fish 1	2.6 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Static system, Fresh water, Read-across)
EC50 Daphnia 1	3.82 mg/l (48 h, Daphnia magna, Flow-through system, Fresh water, Read-across)

#### 12.2. Persistence and degradability

<b>201C Ninhydrin Spray, 16 oz.</b>	
Persistence and degradability	Not established.
<b>ninhydrine (485-47-2)</b>	
Persistence and degradability	Biodegradability in water: no data available.
ThOD	1.53 g O <sub>2</sub> /g substance
<b>ethanol (64-17-5)</b>	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.8 - 0.967 g O <sub>2</sub> /g substance
Chemical oxygen demand (COD)	1.7 g O <sub>2</sub> /g substance
ThOD	2.1 g O <sub>2</sub> /g substance
BOD (% of ThOD)	0.43
<b>ethyl acetate (141-78-6)</b>	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.293 g O <sub>2</sub> /g substance
Chemical oxygen demand (COD)	1.69 g O <sub>2</sub> /g substance
ThOD	1.82 g O <sub>2</sub> /g substance
<b>xylene, mixture of isomers (1330-20-7)</b>	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.

#### 12.3. Bioaccumulative potential

<b>201C Ninhydrin Spray, 16 oz.</b>	
Bioaccumulative potential	Not established.
<b>ninhydrine (485-47-2)</b>	
Bioaccumulative potential	No bioaccumulation data available.
<b>ethanol (64-17-5)</b>	
BCF fish 1	1 (Other, 72 h, Cyprinus carpio, Static system, Fresh water, Read-across)
Log Pow	-0.31 (Experimental value)
Bioaccumulative potential	Not bioaccumulative.

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<b>ethyl acetate (141-78-6)</b>	
BCF fish 1	30 (3 day(s), Leuciscus idus, Static system, Experimental value)
Log Pow	0.68 (Experimental value, EPA OPPTS 830.7560, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

<b>xylene, mixture of isomers (1330-20-7)</b>	
BCF fish 1	7 - 26 (8 week(s), Oncorhynchus mykiss, Flow-through system, Fresh water, Experimental value)
Log Pow	3.2 (Conclusion by analogy, 20 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

### 12.4. Mobility in soil

<b>ethanol (64-17-5)</b>	
Surface tension	0.022 N/m (20 °C)
Ecology - soil	Highly mobile in soil.

<b>ethyl acetate (141-78-6)</b>	
Surface tension	0.024 N/m (20 °C)
Ecology - soil	Low potential for adsorption in soil.

<b>xylene, mixture of isomers (1330-20-7)</b>	
Surface tension	28.01 - 29.76 mN/m (25 °C)
Ecology - soil	No (test) data on mobility of the substance available. May be harmful to plant growth, blooming and fruit formation.

### 12.5. Other adverse effects

Effect on the global warming	: No known effects from this product.
GWPmix comment	: No known effects from this product.
Other information	: Avoid release to the environment.

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations. Container under pressure. Do not drill or burn even after use. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
Additional information	: Flammable vapors may accumulate in the container. Handle empty containers with care because residual vapors are flammable. Hazardous waste due to potential risk of explosion.
Ecology - waste materials	: Avoid release to the environment.

## SECTION 14: Transport information

### Department of Transportation (DOT)

In accordance with DOT

Transport document description	: 1950 Consumer commodity (Xylene), 2.1, III
UN-No.(DOT)	: 1950
Proper Shipping Name (DOT)	: Consumer commodity Xylene
Class (DOT)	: 2.1 - Class 2.1 - Flammable gas 49 CFR 173.115
Packing group (DOT)	: III - Minor Danger
Hazard labels (DOT)	: 6.1 - Poison 2.1 - Flammable gas



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Other information : No supplementary information available.

### Transportation of Dangerous Goods

#### Transport by sea

#### Air transport

Transport document description (IATA) : UN 1950 Aerosols, flammable, containing substances in Division 6.1, Packing Group iii, 2.1, III  
UN-No. (IATA) : 1950  
Proper Shipping Name (IATA) : Aerosols, flammable, containing substances in Division 6.1, Packing Group iii  
Class (IATA) : 2.1 - Gases : Flammable  
Packing group (IATA) : III - Minor Danger

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

No additional information available

### 15.2. International regulations

#### CANADA

No additional information available

#### EU-Regulations

No additional information available

#### National regulations

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Listed on IARC (International Agency for Research on Cancer)

### 15.3. US State regulations

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U.S. - California - Proposition 65 - Carcinogens List	Yes
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No

## SECTION 16: Other information

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.  
Training advice : Normal use of this product shall imply use in accordance with the instructions on the packaging.  
Other information : None.



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Full text of H-phrases:

H220	Extremely flammable gas
H225	Highly flammable liquid and vapour
H226	Flammable liquid and vapour
H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H340	May cause genetic defects
H350	May cause cancer

NFPA health hazard

: 1 - Materials that, under emergency conditions, can cause significant irritation.

NFPA fire hazard

: 4 - Materials that rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and burn readily.

NFPA reactivity

: 0 - Material that in themselves are normally stable, even under fire conditions.

NFPA specific hazard

: OX - Materials that posses oxidizing properties.

Hazard Rating

Health

: 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability

: 4 Severe Hazard - Flammable gases, or very volatile flammable liquids with flash points below 73 F, and boiling points below 100 F. Materials may ignite spontaneously with air. (Class IA)

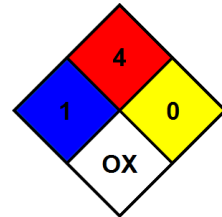
Physical

: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Personal protection

: G

G - Safety glasses, Gloves, Vapor respirator



SDS US (GHS HazCom 2012)

*The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, expressed or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of the information for their particular purposes.*