

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
 Product name : RAY - After Fuming Dye Stain  
 Product code : A-26561

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

Use of the substance/mixture : Laboratory chemical

#### 1.3. Details of the supplier of the safety data sheet

Arrowhead Forensics  
 11006 Strang Line Road  
 Lenexa, KS 66215  
 T 913-894-8388  
<http://www.arrowheadforensics.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  
 Skin corrosion/irritation Category 2 H315  
 Serious eye damage/eye irritation Category 2A H319  
 Specific target organ toxicity (single exposure) Category 3 H336

Full text of H statements : see section 16

#### 2.2. Label elements

##### GHS-US labeling

Hazard pictograms (GHS-US) :



GHS02

GHS07

Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H225 - Highly flammable liquid and vapor  
 H315 - Causes skin irritation  
 H319 - Causes serious eye irritation  
 H336 - May cause drowsiness or dizziness

Precautionary statements (GHS-US) :

P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking  
 P233 - Keep container tightly closed  
 P240 - Ground/bond container and receiving equipment  
 P241 - Use explosion-proof electrical, lighting, ventilating equipment  
 P242 - Use only non-sparking tools  
 P243 - Take precautionary measures against static discharge  
 P261 - Avoid breathing fume, mist, spray, vapors  
 P264 - Wash all exposed skin thoroughly after handling  
 P271 - Use only outdoors or in a well-ventilated area  
 P280 - Wear eye protection, protective gloves  
 P302+P352 - If on skin: Wash with plenty of water/...  
 P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
 P304+P340 - If inhaled: Remove person to fresh air and keep 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  
 P312 - Call a poison center/doctor/... if you feel unwell  
 P321 - Specific treatment (see information on this label)  
 P332+P313 - If skin irritation occurs: Get medical advice/attention

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P337+P313 - If eye irritation persists: Get medical advice/attention  
P362+P364 - Take off contaminated clothing and wash it before reuse  
P370+P378 - In case of fire: Use CO<sub>2</sub>, dry chemical, foam, water spray to extinguish  
P403+P233 - Store in a well-ventilated place. Keep container tightly closed  
P403+P235 - Store in a well-ventilated place. Keep cool  
P405 - Store locked up  
P501 - Dispose of contents/container to local/regional/national/international regulations

### 2.3. Other hazards

No additional information available

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

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substance

Not applicable

### 3.2. Mixture

Name	Product identifier	%	GHS-US classification
2-propanol	(CAS No) 67-63-0	98.6	Flam. Liq. 2, H225 Eye Irrit. 2A, H319 STOT SE 3, H336
acetic acid	(CAS No) 64-19-7	1	Flam. Liq. 3, H226 Skin Corr. 1A, H314
Basic Yellow 40	(CAS No) 35869-60-4	< 0.5	Not classified
C.I. basic red 1	(CAS No) 989-38-8	< 0.5	Acute Tox. 3 (Oral), H301 Eye Dam. 1, H318
methanol	(CAS No) 67-56-1	< 0.485	Flam. Liq. 2, H225 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 STOT SE 1, H370
distillates (petroleum), hydrotreated middle	(CAS No) 64742-46-7	< 0.009	Carc. 1B, H350

Full text of H-phrases: 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.

First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.

First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

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

Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

### 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 : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

### 5.2. Special hazards arising from the substance or mixture

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

### 5.3. Advice for firefighters

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.

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

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### SECTION 6: Accidental release measures

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

##### 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

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.

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

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

acetic acid (64-19-7)		
ACGIH	ACGIH TWA (ppm)	10 ppm (Acetic acid; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
ACGIH	ACGIH STEL (ppm)	15 ppm (Acetic acid; USA; Short time value; TLV - Adopted Value)
Basic Yellow 40 (35869-60-4)		
Not applicable		
methanol (67-56-1)		
ACGIH	ACGIH TWA (ppm)	200 ppm (Methanol; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
ACGIH	ACGIH STEL (ppm)	250 ppm (Methanol; USA; Short time value; TLV - Adopted Value)
distillates (petroleum), hydrotreated middle (64742-46-7)		
Not applicable		
2-propanol (67-63-0)		
ACGIH	ACGIH TWA (ppm)	200 ppm (2-propanol; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
ACGIH	ACGIH STEL (ppm)	400 ppm (2-propanol; USA; Short time value; TLV - Adopted Value)
C.I. basic red 1 (989-38-8)		
Not applicable		

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### 8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure. Gas mask. Gloves. Safety glasses.



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 : Yellow liquid.  
Color : Yellow  
Odor : Alcohol 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  
Explosion limits : No data available  
Explosive properties : No data available  
Oxidizing properties : No data available  
Vapor pressure : No data available  
Relative density : No data available  
Relative vapor density at 20 °C : No data available  
Solubility : Soluble in water.  
Water: Solubility in water of component(s) of the mixture :  
• acetic acid: Complete • methanol:  $\geq 100$  g/100ml (20 °C) • 2-propanol: Complete • C.I. basic red 1: 2 g/100ml  
Log Pow : No data available  
Auto-ignition temperature : No data available  
Decomposition temperature : No data available  
Viscosity : No data available  
Viscosity, kinematic : No data available  
Viscosity, dynamic : No data available

### 9.2. Other information

No additional information available

## 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).

### 10.3. Possibility of hazardous reactions

Not established.

### 10.4. Conditions to avoid

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

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### 10.5. Incompatible materials

Strong acids. Strong bases.

### 10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

acetic acid (64-19-7)	
LD50 oral rat	3310 mg/kg body weight (Rat; Other; Read-across)
ATE US (oral)	3310.000 mg/kg body weight

methanol (67-56-1)	
LD50 oral rat	> 5000 mg/kg (Rat; BASF test; Literature study; 1187-2769 mg/kg bodyweight; Rat; Weight of evidence)
LD50 dermal rabbit	15800 mg/kg (Rabbit; Literature study)
LC50 inhalation rat (mg/l)	85 mg/l/4h (Rat; Literature study)
LC50 inhalation rat (ppm)	64000 ppm/4h (Rat; Literature study)
ATE US (oral)	100.000 mg/kg body weight
ATE US (dermal)	300.000 mg/kg body weight
ATE US (gases)	700.000 ppmV/4h
ATE US (vapors)	3.000 mg/l/4h
ATE US (dust, mist)	0.500 mg/l/4h

2-propanol (67-63-0)	
LD50 dermal rabbit	12870 mg/kg (Rabbit; Experimental value; Equivalent or similar to OECD 402; 16.4; Rabbit)
LC50 inhalation rat (mg/l)	73 mg/l/4h (Rat)
ATE US (dermal)	12870.000 mg/kg body weight
ATE US (vapors)	73.000 mg/l/4h
ATE US (dust, mist)	73.000 mg/l/4h

C.I. basic red 1 (989-38-8)	
LD50 oral rat	250 mg/kg (Rat)
ATE US (oral)	250.000 mg/kg body weight

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

Basic Yellow 40 (35869-60-4)	
IARC group	4 - Probably not carcinogenic to humans

2-propanol (67-63-0)	
IARC group	3 - Not classifiable

C.I. basic red 1 (989-38-8)	
IARC group	3 - Not classifiable

Reproductive toxicity : Not classified  
Based on available data, the classification criteria are not met

Specific target organ toxicity (single exposure) : May cause drowsiness or dizziness.

Specific target organ toxicity (repeated exposure) : Not classified

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Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.

### SECTION 12: Ecological information

#### 12.1. Toxicity

methanol (67-56-1)	
LC50 fish 1	15400 mg/l (LC50; EPA 660/3 - 75/009; 96 h; Lepomis macrochirus; Flow-through system; Fresh water; Experimental value)
EC50 Daphnia 1	> 10000 mg/l (EC50; DIN 38412-11; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)
LC50 fish 2	10800 mg/l (LC50; 96 h; Salmo gairdneri)

2-propanol (67-63-0)	
LC50 fish 2	9640 mg/l (LC50; OECD 203; Fish, Acute Toxicity Test; 96 h; Pimephales promelas; Flow-through system; Fresh water; Experimental value)
EC50 Daphnia 2	13299 mg/l (EC50; Other; 48 h; Daphnia magna)
Threshold limit algae 1	> 1000 mg/l (EC50; UBA; 72 h; Scenedesmus subspicatus)

#### 12.2. Persistence and degradability

RAY - After Fuming Dye Stain	
Persistence and degradability	Not established.

acetic acid (64-19-7)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Highly mobile in soil.
Biochemical oxygen demand (BOD)	0.6 - 0.74 g O <sub>2</sub> /g substance
Chemical oxygen demand (COD)	1.03 g O <sub>2</sub> /g substance
ThOD	1.07 g O <sub>2</sub> /g substance

methanol (67-56-1)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Highly mobile in soil.
Biochemical oxygen demand (BOD)	0.6 - 1.12 g O <sub>2</sub> /g substance
Chemical oxygen demand (COD)	1.42 g O <sub>2</sub> /g substance
ThOD	1.5 g O <sub>2</sub> /g substance
BOD (% of ThOD)	0.8 (Literature study)

2-propanol (67-63-0)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Biodegradable in the soil under anaerobic conditions. No (test)data on mobility of the substance available.
Biochemical oxygen demand (BOD)	1.19 g O <sub>2</sub> /g substance
Chemical oxygen demand (COD)	2.23 g O <sub>2</sub> /g substance
ThOD	2.40 g O <sub>2</sub> /g substance

C.I. basic red 1 (989-38-8)	
Persistence and degradability	Biodegradable in water.

#### 12.3. Bioaccumulative potential

RAY - After Fuming Dye Stain	
Bioaccumulative potential	Not established.

acetic acid (64-19-7)	
BCF fish 1	3.16 (BCF; Pisces)
Log Pow	-0.17 (Experimental value; 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

methanol (67-56-1)	
BCF fish 1	< 10 (BCF; 72 h; Leuciscus idus)
Log Pow	-0.77 (Experimental value; Other)

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methanol (67-56-1)	
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
2-propanol (67-63-0)	
Log Pow	0.05 (Weight of evidence approach; Other; 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

### 12.4. Mobility in soil

acetic acid (64-19-7)	
Surface tension	0.028 N/m (20 °C)
Log Koc	log Koc,0.06; QSAR
Ecology - soil	May be harmful to plant growth, blooming and fruit formation.

methanol (67-56-1)	
Surface tension	0.023 N/m (20 °C)
Log Koc	Koc,PCKOCWIN v1.66; 1; Calculated value

2-propanol (67-63-0)	
Surface tension	0.021 N/m (25 °C)

### 12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

Other information : Avoid release to the environment.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials : Avoid release to the environment.

## SECTION 14: Transport information

### Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN1219 Isopropyl alcohol solution (FLAMMABLE LIQUID), 3, II

UN-No.(DOT) : UN1987

Proper Shipping Name (DOT) : Isopropyl alcohol solution  
FLAMMABLE LIQUID

Class (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Hazard labels (DOT) : 3 - Flammable liquid



Packing group (DOT) : II - Medium Danger

Other information : No supplementary information available.

### TDG

No additional information available

### Transport by sea

No additional information available

### Air transport

UN-No. (IATA) : UN1219

Proper Shipping Name (IATA) : Isopropyl alcohol solution

Class (IATA) : 3 - Flammable Liquids

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Packing group (IATA)

: II - Medium Danger

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

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Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Subject to reporting requirements of United States SARA Section 313

##### Basic Yellow 40 (35869-60-4)

Not subject to reporting requirements of the United States SARA Section 313  
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

#### 15.2. International regulations

##### CANADA

No additional information available

##### Basic Yellow 40 (35869-60-4)

Not listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification

Uncontrolled product according to WHMIS classification criteria

##### EU-Regulations

No additional information available

##### Basic Yellow 40 (35869-60-4)

Not listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

##### National regulations

##### Basic Yellow 40 (35869-60-4)

Not listed on the Canadian IDL (Ingredient Disclosure List)

#### 15.3. US State regulations

No additional information available

### 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. Keep in tightly closed container. Keep cool and dry. Avoid all ignition sources - heat, open flame, sparks. Avoid incompatible materials. Avoid dust creation and accumulation. Avoid inhalation and ingestion. Avoid contact with eyes. Wash thoroughly after handling.

Other information

: This Safety Data Sheet has been established in accordance with the applicable European Union legislation.



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### Full text of H-phrases:

H225	Highly flammable liquid and vapor
H226	Flammable liquid and vapor
H301	Toxic if swallowed
H311	Toxic in contact with skin
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation
H331	Toxic if inhaled
H336	May cause drowsiness or dizziness
H350	May cause cancer
H370	Causes damage to organs

### NFPA health hazard

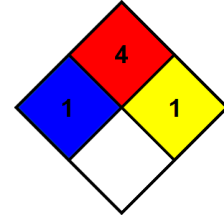
: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

### NFPA fire hazard

: 4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.

### NFPA reactivity

: 1 - Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.



### HMIS III 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

: 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.

### 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.*