


**1. Identification**

<b>Product identifier</b>	<b>KURARAY POVAL™ Polyvinyl Alcohol Resin, Partially Hydrolyzed</b>
<b>Other means of identification</b>	
<b>Product code</b>	3-85, 13-86, 21-87, 23-87, 4-88, 5-88, 5-88S2, 6-88, 13-88, 22-88, 22-88S2, 40-88, 42-88, 44-88, 44-88S2, 47-88, 49-88, 49-88S2, 27-96
<b>Synonyms</b>	PVOH, PVA, PVAL, poly(vinyl alcohol), ethenol homopolymer, partially hydrolyzed, partially saponified.
<b>Recommended use</b>	For industrial use only. Dissolution into water for use as a synthetic binder, coating, or viscosity modifier. Raw material for textile sizing agents, paper processing agents, adhesives binders, barrier coatings.
<b>Recommended restrictions</b>	See Section 16 regarding restrictions on the use of this product.
<b>Manufacturer/Importer/Supplier/Distributor information</b>	
<b>Manufacturer / Importer / Supplier / Distributor information</b>	
<b>Company name</b>	Kuraray America, Inc.
<b>Address</b>	2625 Bay Area Blvd, Suite 600 Houston, TX 77058-1551 USA
<b>Telephone</b>	1-800-423-9762 (within USA) +1-281-283-1711 (International)
<b>E-mail</b>	info@kurarayamerica.com
<b>Emergency phone number</b>	For chemical emergency spill, leak, fire, exposure or accident Call CHEMTREC day or night Within USA and Canada: 1-800-424-9300 CCN706984 or +1 703-527-3887 (collect calls accepted)

**2. Hazard(s) identification**

<b>Physical hazards</b>	Not classified.
<b>Health hazards</b>	Specific target organ toxicity, single exposure Category 1 (Central nervous system, Optic nerve)
<b>Environmental hazards</b>	Not classified.
<b>OSHA defined hazards</b>	Combustible dust
<b>Label elements</b>	
	
<b>Signal word</b>	Danger
<b>Hazard statement</b>	Causes damage to organs (Central nervous system, Optic nerve). May form combustible dust concentrations in air.
<b>Precautionary statement</b>	
<b>Prevention</b>	Prevent dust accumulation to minimize explosion hazard. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Do not breathe dust. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Observe good industrial hygiene practices.
<b>Response</b>	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth. If exposed: Call a poison center/doctor. Take off contaminated clothing and wash it before reuse. In case of fire: Use appropriate media to extinguish.
<b>Storage</b>	Store locked up. Store in a dry area. Store in a closed container.

<b>Disposal</b>	Dispose of waste and residues in accordance with local authority requirements.
<b>Hazard(s) not otherwise classified (HNOC)</b>	None known.
<b>Supplemental information</b>	None.
<b>Substance(s) formed under the condition of use</b>	Not applicable.

### 3. Composition/information on ingredients

#### Mixtures

Chemical name	Common name and synonyms	CAS number	%
Polyvinyl alcohol, Partially Hydrolyzed		25213-24-5	> 94
Methanol		67-56-1	< 3
Methyl acetate		79-20-9	< 1
Other components below reportable levels			< 5

### 4. First-aid measures

<b>Inhalation</b>	If dust from the material is inhaled, remove the affected person immediately to fresh air. Call a physician if symptoms develop or persist.
<b>Skin contact</b>	Wash off with soap and water. Get medical attention if irritation develops and persists.
<b>Eye contact</b>	Do not rub eyes. Rinse with plenty of water. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Rinse mouth with water. Get medical attention if symptoms occur.
<b>Most important symptoms/effects, acute and delayed</b>	Dusts may irritate the respiratory tract, skin and eyes.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
<b>General information</b>	If you feel unwell, seek medical advice (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

<b>Suitable extinguishing media</b>	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO <sub>2</sub> ). Apply extinguishing media carefully to avoid creating airborne dust.
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards arising from the chemical</b>	Explosion hazard: Avoid generating dust; fine dust dispersed in air in sufficient concentrations and in the presence of an ignition source is a potential dust explosion hazard. During fire, gases hazardous to health may be formed.
<b>Special protective equipment and precautions for firefighters</b>	Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Fire fighting equipment/instructions</b>	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>General fire hazards</b>	May form combustible dust concentrations in air.

### 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Use only non-sparking tools. Keep out of low areas. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Wear appropriate protective equipment and clothing during clean-up. Do not breathe dust. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
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**Methods and materials for containment and cleaning up**

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Collect dust using a vacuum cleaner equipped with HEPA filter. Stop the flow of material, if this is without risk.

Large Spills: Wet down with water and dike for later disposal. Shovel material into waste container for disposal. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

**Environmental precautions**

Avoid discharge into drains, water courses or onto the ground. Environmental manager must be informed of all major spillages.

**7. Handling and storage****Precautions for safe handling**

Minimize dust generation and accumulation. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Explosion-proof general and local exhaust ventilation. Do not breathe dust. Avoid prolonged exposure. When using, do not eat, drink or smoke. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities**

Store locked up. Keep containers tightly closed in a dry, cool and well-ventilated place. To maintain product quality, do not store in heat or direct sunlight. Store away from incompatible materials (see Section 10 of the SDS).

**8. Exposure controls/personal protection****Occupational exposure limits****US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Components	Type	Value
Methanol (CAS 67-56-1)	PEL	260 mg/m <sup>3</sup>
		200 ppm
Methyl acetate (CAS 79-20-9)	PEL	610 mg/m <sup>3</sup>
		200 ppm

**US. OSHA Table Z-3 (29 CFR 1910.1000)**

Components	Type	Value	Form
Dust	TWA	5 mg/m <sup>3</sup>	Respirable fraction.
		15 mg/m <sup>3</sup>	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.

**US. ACGIH Threshold Limit Values**

Components	Type	Value	Form
Dust	TWA	3 mg/m <sup>3</sup>	Respirable particles.
		10 mg/m <sup>3</sup>	Inhalable particles.
Methanol (CAS 67-56-1)	STEL	250 ppm	
	TWA	200 ppm	
Methyl acetate (CAS 79-20-9)	STEL	250 ppm	
	TWA	200 ppm	

**US. NIOSH: Pocket Guide to Chemical Hazards**

Components	Type	Value
Methanol (CAS 67-56-1)	STEL	325 mg/m <sup>3</sup>

**US. NIOSH: Pocket Guide to Chemical Hazards**

Components	Type	Value
Methyl acetate (CAS 79-20-9)		250 ppm
	TWA	260 mg/m3
		200 ppm
	STEL	760 mg/m3
		250 ppm
	TWA	610 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 - Tennessee 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**

Explosion-proof general and local exhaust ventilation. 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. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn.

**Individual protection measures, such as personal protective equipment****Eye/face protection**

Do not get in eyes. Wear safety glasses with side shields (or goggles). Eye wash fountain is recommended.

**Skin protection****Hand protection**

Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

**Other**

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended. It is good industrial hygiene practice to minimize skin contact.

**Respiratory protection**

Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Chemical respirator with organic vapor cartridge, full facepiece, dust and mist filter.

**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**

Solid.

**Form**

Granular

**Color**

White

**Odor**

Odourless.

<b>Odor threshold</b>	Not available.
<b>pH</b>	4.5 - 7
<b>Melting point/freezing point</b>	392 - 446 °F (200 - 230 °C)
<b>Initial boiling point and boiling range</b>	Not applicable.
<b>Flash point</b>	> 199.4 °F (> 93.0 °C)
<b>Evaporation rate</b>	Not applicable.
<b>Flammability (solid, gas)</b>	Not available.
<b>Upper/lower flammability or explosive limits</b>	
<b>Explosive limit - lower (%)</b>	Not available.
<b>Explosive limit - upper (%)</b>	Not available.
<b>Vapor pressure</b>	Not available.
<b>Vapor density</b>	Not available.
<b>Relative density</b>	Not available.
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	> 80 %
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	> 824 °F (> 440 °C)
<b>Decomposition temperature</b>	> 320 °F (> 160 °C)
<b>Viscosity</b>	3 - 52 mPa·s (4% conc. in water)
<b>Other information</b>	
<b>Bulk density</b>	400 - 600 kg/m <sup>3</sup>
<b>Density</b>	0.82 g/cm <sup>3</sup> estimated
<b>Explosive properties</b>	Not explosive.
<b>Oxidizing properties</b>	Not oxidizing.
<b>Percent volatile</b>	< 5 %

## 10. Stability and reactivity

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>Conditions to avoid</b>	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Avoid temperatures exceeding the decomposition temperature. Avoid temperatures exceeding the flash point. Contact with incompatible materials. Minimize dust generation and accumulation.
<b>Incompatible materials</b>	Strong oxidizing agents.
<b>Hazardous decomposition products</b>	Alcohols. Carbon oxides. Aldehydes. Organic acids.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	Dust may irritate respiratory system. Prolonged inhalation may be harmful. PVOH is considered a nuisance dust, avoid with engineering controls or PPE.
<b>Skin contact</b>	Dust or powder may irritate the skin.
<b>Eye contact</b>	Dust may irritate the eyes.
<b>Ingestion</b>	Expected to be a low ingestion hazard. May cause discomfort if swallowed.

**Symptoms related to the physical, chemical and toxicological characteristics**      Dusts may irritate the respiratory tract, skin and eyes.

### Information on toxicological effects

**Acute toxicity**      Not expected to be toxic under normal conditions of intended use.

Components	Species	Test Results
Methanol (CAS 67-56-1)		
<b>Acute</b>		
<b>Dermal</b>		
LD50	Rabbit	17100 mg/kg
<b>Inhalation</b>		
LC50	Rat	128200 mg/m <sup>3</sup> , 4 Hours
<b>Oral</b>		
LD50	Rat	1187 - 2769 mg/kg
Methyl acetate (CAS 79-20-9)		
<b>Acute</b>		
<b>Dermal</b>		
LD50	Rabbit	>= 5000 mg/kg
<b>Oral</b>		
LD50	Rat	3705 mg/kg
<b>Skin corrosion/irritation</b>	Prolonged skin contact may cause temporary irritation.	
<b>Serious eye damage/eye irritation</b>	Direct contact with eyes may cause temporary irritation.	
<b>Respiratory or skin sensitization</b>	This product is not expected to cause skin sensitization.	
<b>Respiratory sensitization</b>	This product is not expected to cause respiratory sensitization.	
<b>Skin sensitization</b>	This product is not expected to cause skin sensitization.	
<b>Germ cell mutagenicity</b>	This product is not expected to cause mutagenic or genotoxic effects.	
<b>Carcinogenicity</b>	This product is not classified as a carcinogen. This product does not contain any carcinogens or potential carcinogens as listed by IARC, NTP or OSHA.	
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>		
Not listed.		
<b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)</b>		
Not listed.		
<b>US. National Toxicology Program (NTP) Report on Carcinogens</b>		
Not listed.		
<b>Reproductive toxicity</b>	This product is not expected to cause reproductive or developmental effects.	
<b>Specific target organ toxicity - single exposure</b>	Causes damage to organs (Central nervous system, Optic nerve).	
<b>Specific target organ toxicity - repeated exposure</b>	Not classified.	
<b>Aspiration hazard</b>	Not an aspiration hazard.	
<b>Chronic effects</b>	Prolonged inhalation may be harmful.	

## 12. Ecological information

<b>Ecotoxicity</b>	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.		
<b>Components</b>			
<b>Species</b>			
<b>Test Results</b>			
Methanol (CAS 67-56-1)			
	LC50	Lepomis macrochirus	15400 mg/l, 96 hours
<b>Aquatic</b>			
	EC50	Algae	22000 mg/l, 96 hours
	EC50	Daphnia magna	> 10000 mg/l, 48 hours
Methyl acetate (CAS 79-20-9)			
	LC50	Brachydanio rerio	250 - 350 mg/l, 96 hours
<b>Aquatic</b>			
	EC50	Freshwater algae	120 mg/l, 72 hours

Components	Species	Test Results
	NOEC	Freshwater algae 120 mg/l, 72 hours
Crustacea	EC50	Daphnia magna 1026.7 mg/l, 48 hours
<b>Persistence and degradability</b>	Expected to be inherently biodegradable. The OECD test procedure 302B (Modified Zahn-Wellens test) was used to measure the inherent biodegradability. The product attained 84% degradability within 28 day time period.	
<b>Bioaccumulative potential</b>	The product is not expected to bioaccumulate.	
<b>Partition coefficient n-octanol / water (log Kow)</b>		
Methyl acetate	0.18, 20°C	
<b>Mobility in soil</b>	No data available.	
<b>Other adverse effects</b>	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

<b>Disposal instructions</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Local disposal regulations</b>	Dispose in accordance with all applicable regulations.
<b>Hazardous waste code</b>	Contact a licensed professional disposal service to dispose of this material.
<b>Waste from residues / unused products</b>	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
<b>Contaminated packaging</b>	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

### 14. Transport information

<b>DOT</b>	Not regulated as dangerous goods.
<b>IATA</b>	Not regulated as dangerous goods.
<b>IMDG</b>	Not regulated as dangerous goods.
<b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	Not applicable.

### 15. Regulatory information

<b>US federal regulations</b>	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.	
<b>Toxic Substances Control Act (TSCA)</b>		
<b>TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)</b>	Not regulated.	
<b>CERCLA Hazardous Substance List (40 CFR 302.4)</b>		
Methanol (CAS 67-56-1)	Listed.	
Methyl acetate (CAS 79-20-9)	Listed.	
<b>SARA 304 Emergency release notification</b>	Not regulated.	
<b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)</b>	Not listed.	
<b>Superfund Amendments and Reauthorization Act of 1986 (SARA)</b>		
<b>SARA 302 Extremely hazardous substance</b>	Not listed.	
<b>SARA 311/312 Hazardous chemical</b>	Yes	
<b>Classified hazard categories</b>	Combustible dust Specific target organ toxicity (single or repeated exposure)	

**SARA 313 (TRI reporting)**

Chemical name	CAS number	% by wt.
Methanol	67-56-1	< 3

**Other federal regulations****Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Methanol (CAS 67-56-1)

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

Not regulated.

**Safe Drinking Water Act (SDWA)** Contains component(s) regulated under the Safe Drinking Water Act.**FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace**

Methyl acetate (CAS 79-20-9)

Low priority

**US state regulations****California Proposition 65**

**WARNING:** This product can expose you to chemicals including Methanol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

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

Methanol (CAS 67-56-1)

Listed: March 16, 2012

**US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))**

Methanol (CAS 67-56-1)

**International Inventories**

Country(s) or region	Inventory name	On inventory (yes/no)*
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	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
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 country(s).

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

<b>Issue date</b>	12-15-2015
<b>Revision date</b>	09-08-2020
<b>Version #</b>	09
<b>Further information</b>	Refer to: OSHA 3371-08 2009, Hazard Communication Guidance for Combustible Dusts NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids



**Disclaimer**

Do not use Kuraray materials in medical applications involving implantation in the human body or contact with internal body fluids or tissues unless the material has been provided from Kuraray under a written contract that is consistent with Kuraray policy regarding medical applications and expressly acknowledges the contemplated use. For further information, please contact your Kuraray representative.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. The user has the responsibility to determine the suitability of the material for any use and the manner of use contemplated. The user must meet all applicable safety and health standards. No warranty, expressed or implied, regarding the accuracy of this data, the hazards connected with the use of the material, or the results to be obtained from the use thereof, is made. Kuraray America, Inc. and its affiliates assume no responsibility for damage or injury from the use of the product described herein.

**Revision information**

This document has undergone significant changes and should be reviewed in its entirety.