

	MATERIAL SAFETY DATA SHEET FOR T90 HOP PELLETS		MSDST90PELLETS
PRODUCTS AND MANUFACTURER			
CHEMICAL NAME AND SYNONYMS Pelletised, powdered hops		TRADE NAME Hop Pellets (Type 90)	
CHEMICAL FAMILY Desired components include the hop bitter acids and essential oils.		FORMULA Not Applicable	
MANUFACTURER'S NAME Indie Hops, LLC	TELEPHONE +1 503 452 4677	EMAIL matt@indiehops.com	
ADDRESS 2505 SE 11th Ave, Ste 311, Portland, OR, 97202, USA			
MATERIALS OR COMPONENTS			
Pelletised, powdered cones of the cultivated hop plant <i>Humulus lupulus</i> . Hop pellets are available from many varieties of hops. Used as an ingredient in the brewing of beers. This MSDS applies equally to all varieties.			
CAS Number	Humulones (Alpha Acid) 26472-41-3	Lupulones (Beta Acids) 468-20-0	
PHYSICAL DATA			
FORM Pelleted powder/flake	SPECIFIC GRAVITY Not applicable	DENSITY (KG/M³) 470-700	COLOUR Various shades of green
AROMA Characteristic, typical hoppy, depends on variety		BOILING POINT Not applicable	VAPOR PRESSURE Not applicable
VOLATILE BY VOLUME (%) Applicable only to the essential oil fraction which comprises 0.5 - 5%.			VAPOR DENSITY Not applicable
SOLUBILITY IN WATER Insoluble in water	pH Not applicable	FLASHPOINT Not applicable	EVAPORATION RATE Not applicable
FIRE AND EXPLOSION HAZARD DATA			
EXTINGUISHING MEDIA Use a dry powder, foam or carbon dioxide. Keep containers and surrounding cool with water spray			
SPECIFIC FIRE FIGHTING PROCEDURES Fire fighters should wear self contained positive pressure breathing apparatus			
UNSUITABLE EXTINGUISHING MEDIA Great care should be taken using water jet/spray.		UNUSUAL FIRE AND EXPLOSION HAZARDS None known	

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HEALTH HAZARD DETAIL				
MAIN HAZARDS None	EFFECTS OF OVEREXPOSURE None known	THRESHOLD LIMIT VALUE None		
HAZARDS IDENTIFICATION Associated dust may be irritating to mouth and throat, eyes, and skin				
EMERGENCY AND FIRST AID PROCEDURES				
SKIN CONTACT Brush of excess material and wash skin thoroughly with mild soap and water.	EYE CONTACT Flood eye with plenty of water. If any systems persist obtain medical attention.	INHALATION Move to fresh air	ORAL INGESTION Drink large amounts of water to dilute. Vomiting may occur but should not be induced. Obtain medical attention if symptoms persist	
ACCIDENTAL SPILL PROCEDURES				
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED Normal clean-up procedures as for any agricultural commodity.				
ENVIRONMENTAL PRECAUTIONS Do not allow product to enter drains, watercourses	WASTE DISPOSAL METHODS Biodegradable material acceptable at landfill sites.		PERSONAL PROTECTION Wear appropriate protective clothing	
SPECIAL PROTECTION INFORMATION				
RESPIRATORY PROTECTION If any danger of generating dust, use facemask	PROTECTIVE GLOVES Normally not required	ENGINEERING CONTROLS Provide adequate ventilation	EYE PROTECTION If in danger of generating dust use facemask or goggles	
HANDLING AND STORAGE				
STORAGE TEMPERATURE To guarantee quality avoid heat, moisture, strong odours during storage. Pellets should not be exposed to temperatures above 20°C (68°F) since it is possible that gases are formed from hop constituents. The resulting pressure increase may cause bursting of the foils. Consequently the pellets are exposed to air and oxidation takes place resulting in a considerable deterioration of quality. Suitable storage containers are thick gauge laminated foil bags, stainless steel and lacquered mild steel.				
STABILITY AND REACTIVITY Hop constituents oxidize in contact with air, no hazardous reactivity known. If originally sealed packages are stored at temperatures above 20°C (68°F), gas formation is possible. Combustion will generate oxides of carbon.				
TOXICOLOGICAL INFORMATION No data available. Supported by a long history of safe use in brewing and in accordance with US FDA 21 CFR 182.2, hop pellets and hop extracts are generally recognised as safe (GRAS).				
ECOLOGICAL INFORMATION The product is all natural and biodegradable. Not expected to bioaccumulate				

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DISPOSAL CONSIDERATIONS		
PRODUCT DISPOSAL Dispose of in accordance with all applicable local and national regulations	CONTAINER DISPOSAL Labels should not be removed from containers until they have been cleaned. Contaminated containers should not be treated as household waste. Containers should be cleaned using appropriate methods and then re-used, re-cycled, or disposed of by landfill or incineration as appropriate.	
TRANSPORT INFORMATION		
UN-No. Non-hazardous for transport	RID Non-hazardous for transport	CLASS Non-hazardous for transport
RECOMMENDED TRANSPORT CONDITIONS Quickest possible transport at temperatures below 20°C (68°F)		
REGULATORY INFORMATION - LABELING ACCORDING TO EC DIRECTIVES		
R-PHRASES Not applicable	S-PHRASES Not applicable	EINECS LISTING Not listed
NOTICE FROM INDIE HOPS, LLC		
<p>The information in this Material Data Safety Sheet is correct to the best of our knowledge. This information herein is furnished without warranty of any kind. This information should be used only as a supplement to information already in your possession concerning this product. The determination of whether and under what conditions the product should be used by your employees is yours to make. We do not accept any liability for loss, injury or damage that may result from its use.</p> <p>Date of Issue: January 8, 2020</p>		