Basekim
Chemical Production Co.Ltd.

Material Safety Data Sheet (MSDS) of Bitumen PG 58/22

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Bitumen

Product Use: Bitumen
Product Number(s): 601104, 601105, 601106, 601107
Synonyms: Bitumen
Company Identification
Basekim Kimyasal urunler LTD
Turan Gunes Blv. Ilkbahar Mah.Sinpas Altinoran tower 2 floor unit 146
Transportation Emergency Response
logistic: 88552948
Health Emergency
Basekim emergency Information Center: Located in Ankara. International collect calls accepted. (3125147055) or (3125147081)
Product Information
Product Information: 3125147055
MSDS Requests: 3125147081

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Bitumen	8052-42-4	0 - 100 %weight
Oxidized Bitumen	64742-93-4	0 - 100 %weight

SECTION 3 HAZARDS IDENTIFICATION

IMMEDIATE HEALTH EFFECTS
Eye: Not expected to cause prolonged or significant eye irritation. If this material is heated, thermal burns may result from eye contact.
Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin. If this material is heated, thermal burns may result from skin contact.
Ingestion: Not expected to be harmful if swallowed.
Inhalation: The vapor or fumes from this material may cause respiratory irritation. Symptoms of respiratory irritation may include coughing and difficulty breathing. Hydrogen sulfide has a strong rotten-egg odor. However, with continued exposure and at high levels, H2S may deaden a person's sense of smell. If the rotten egg odor is no longer noticeable, it may not necessarily mean that exposure has stopped. At low levels, hydrogen sulfide causes irritation of the eyes, nose, and throat. Moderate levels

can cause headache, dizziness, nausea, and vomiting, as well as coughing and difficulty breathing. Higher levels can cause shock, convulsions, coma, and death. After a serious exposure, symptoms usually begin immediately.

The U.S. National Institute for Occupational Safety and Health (NIOSH) considers air concentrations of hydrogen sulfide gas greater than 100 ppm to be Immediately Dangerous to Life and Health (IDLH).

DELAYED OR OTHER HEALTH EFFECTS:
Cancer: May cause cancer in laboratory animals, but the available information is inadequate to determine if this material can cause cancer in humans.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water. If heated material should splash into eyes, flush eyes immediately with fresh water for 15 minutes while holding the eyelids open. Remove contact lenses, if worn. Get immediate medical attention.
Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, apply a waterless hand cleaner, mineral oil, or petroleum jelly. Then wash with soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse. If the hot material gets on skin, quickly cool in water. See a doctor for extensive burns. Do not try to peel the solidified material from the skin, or use solvents or thinners to dissolve it. The use of vegetable oil or mineral oil is recommended for removal of this material from the skin.
Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.
Inhalation: Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue. If exposure to hydrogen sulfide (H2S) gas is possible during an emergency, wear an approved, positive pressure air-supplying respirator. Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.
Note to Physicians: Administration of 100% oxygen and supportive care is the preferred treatment for poisoning by hydrogen sulfide gas. For additional information on H2S, see ATDM MSDS No. 301.

SECTION 5 FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:
Flashpoint: 160 °C - 250 °C (320 °F - 482 °F)
Autoignition: 482 °C (900 °F)
Flammability (Explosive) Limits (% by volume in air): Lower: 0.7 Upper: 6

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion. Combustion may form oxides of: Sulfur .

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.
Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations. If heated material is spilled, allow it to cool before proceeding with disposal methods.
Reporting: Report spills to local authorities as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: This material is typically stored, transported and used at temperatures between 275F (135C) and 325F (163C). DO NOT ADD OR ALLOW WATER TO MIX WITH HOT BITUMEN. Steam generated eruptions may occur. STORE AND TRANSPORT BITUMEN ONLY IN PROPERLY VENTED CONTAINERS. Combustion of Bitumen and Bitumen vapors may occur. DO NOT MISHANDLE BITUMEN EQUIPMENT. Observe manufacturer's guidelines on proper equipment use.
Do not get in eyes, on skin, or on clothing. Do not breathe vapor or fumes from heated material. Smoking, eating and drinking, etc. should be prohibited when skin contact with the product or fume condensate is possible. Workers should clean hands and face before smoking, eating and drinking, etc. Do not use solvents to clean hands and face. Use vegetable oils or mineral oil, followed by a thorough washing with soap and water. Avoid contact of heated material with eyes, skin, and clothing. Do not breathe vapor or fumes. Wash thoroughly after handling.
Unusual Handling Hazards: An ignition source should be considered present in large tanks where Bitumen is stored at temperatures above 350 F (176.7C). Deposits can form in the vapor space of large Bitumen tanks which may ignite as low as 350 F. Pyrophoric iron sulfide, commonly present in such tanks, may cause ignition below 350 F.
Toxic quantities of hydrogen sulfide (H2S) may be present in storage tanks and bulk transport vessels which contain or have contained this material. Persons opening or entering these compartments should first determine if H2S is present. See Exposure Controls/Personal Protection -Section 8. Do not attempt rescue of a person over exposed to H2S without wearing approved supplied-air or self-contained breathing equipment. If there is a potential for exceeding one-half the occupational exposure standard, monitoring of hydrogen sulfide levels is required. Since the sense of smell cannot be relied upon to detect the presence of

H2S, the concentration should be measured by the use of fixed or portable devices.
General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice. If this material is heated, wear chemical goggles or safety glasses or a face shield.
Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Viton, Chlorinated Polyethylene (or Chlorosulfonated Polyethylene). If this material is heated, wear insulated clothing to prevent skin contact if engineering controls or work practices are not adequate to prevent skin contact.
Respiratory Protection: Determine if airborne concentrations are below the recommended occupational exposure limits for jurisdiction of use. If airborne concentrations are above the acceptable limits, wear an approved respirator that provides adequate protection from this material, such as: Air-Purifying Respirator for Organic Vapors, Dusts and Mists. If material is heated and emits hydrogen sulfide, determine if airborne concentrations are below the occupational exposure limit for hydrogen sulfide. If not, wear an

approved positive pressure air-supplying respirator. For more information on hydrogen sulfide, see ATDM MSDS No. 301.
Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.
Occupational Exposure Limits:

Component	Country/ Agency	TWA	STEL	Ceiling	Notation
Bitumen	ACGIH	.5 mg/m3	--	--	--

The ACGIH TLV is 0.5 mg/m3 as the benzene extractable portion of the inhalable fraction of Bitumen fume. The TLV may also be determined by unspecified 'equivalent' methods.
Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Black
Physical State: Semi-solid
Odor: Petroleum odor
pH: Not Applicable
Vapor Pressure: No data available
Vapor Density (Air = 1): No data available
Boiling Point: 350°C (662°F) - 470°C (878°F)
Solubility: Insoluble in water.
Melting Point: No Data Available
Specific Gravity: 1 - 1.18 @ 15.6°C (60.1°F) / 15.6°C (60.1°F)
Viscosity: No data available

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Hazardous Decomposition Products: None known (None expected)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS
Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.
Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product

components.
Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials or product components.
Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.
Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.
Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.
ADDITIONAL TOXICOLOGY INFORMATION:
There is concern about the carcinogenicity of chemical compounds found in Bitumens. The International Agency for Research on Cancer (IARC) reviewed the carcinogenic potential of Bitumens in 1985 and again in 1987. At that time, they concluded there was inadequate evidence to decide that Bitumens were carcinogenic to humans. Overall, findings from health monitoring studies of Bitumen workers are not conclusive. However, Bitumen fume condensates and certain chemical components of Bitumen fume have been shown to cause cancer in mice when repeatedly applied to the skin and allowed to remain on the skin for a prolonged period of time. In addition, Bitumen fume condensates have been shown to be weakly positive in Ames mutagenicity tests. Skin contact and breathing of fumes, mists and vapors should be reduced to a minimum.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY
This material is not expected to be harmful to aquatic organisms. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material.
ENVIRONMENTAL FATE
Ready Biodegradability: This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by international, country, or local laws and regulations.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: cold delivery has not any regulation
IMO/IMDG Shipping Description: cold delivery has not any regulation
ICAO/IATA Shipping Description: cold delivery has not any regulation

SECTION 15 REGULATORY INFORMATION

REGULATORY LISTS SEARCHED:
01-1=IARC Group 1
01-2A=IARC Group 2A
01-2B=IARC Group 2B

The following components of this material are found on the regulatory lists indicated.
Bitumen 01-2B

CHEMICAL INVENTORIES:
All components comply with the following chemical inventory requirements: TSE
EU RISK AND SAFETY PHRASES: S61: Avoid release to the environment. Refer to special instructions/Safety data sheets.
WHMIS CLASSIFICATION:
This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

SECTION 16 OTHER INFORMATION

REVISION STATEMENT: This is a new Material Safety Data Sheet.
Revision Date: March 3, 2020

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - ATDM	NFPA - National Fire Protection Association
DOT - Department of Transportation	NTP - National Toxicology Program
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the International Standard (ISO 11014-1) by the basekim on 3/03/2020